GOVERNMENT DEGREE COLLEGE

PEDDAPALLI

Government Degree College

Peddapalli

HAND BOOK

2018-19

HAND BOOK

2018-19

FACULTIES OF ARTS, COMMERCE AND SCIENCE

(B.A., B.Com, B.Sc.)

CBCS

Chairman

SRI. P. NITHIN, M.Sc.(Physics).

PRINCIPAL

Convenor

Dr.SK.BASHA,
Asst.Prof. ofHindi

Advisors

Lt.R.SANJEEV,
Lecturer in Chemistry

Sri.A.Laxminarayana,
Lecturer in Economics.

Sri.M.Thirupathi,
Lecturer in English.

Students

M.Ramesh,B.Sc.BZC II

Md.Gouse Pasha, B.Com. II

M.Srilatha, B.A. II

1.1 INTRODUCTION

The Government Degree College Peddapalli was established in 1987 with Arts & Commerce Subjects.

Subsequently, Science courses were introduced in 1997. At present, there are 16 UG courses on offer. Presently

the college has a two-storied building with 44 rooms, sophisticated laboratories for the science and commerce

departments, the well-stocked library, has a very big playground, a well-equipped gymnasium, and a separate

reading room to enrich the knowledge of the students.

The college has N.C.C wing, and two N.S.S Units, Mana T.V. facilities, and conducts numerous activities

through different clubs like Eco-Club, Consumer Club, Women's Cell, Consumer Redressal Cell, Red Ribbon

Club, etc.

Finally the Government Degree College, Peddapalli has all the facilities and potentialities with infrastructural

and other physical facilities. Permanent, experienced, qualified, committed and motivated teaching faculty is an

added asset of this college, for imparting quality education with a motto of overall development of the students

and crafting them as good citizens of the nation.

Vision

Imparting Quality Education, founded on value-based academic principles, especially to the Rural, Socially and
economically underprivileged students to make them self- reliant and to contribute effectively, efficiently and
responsibly to the Nation and Global Community.

Mission

Provide the students with a teaching-learning experience that develops in them the capacities for creativity,
effective communication, and in-depth knowledge.

Build a culture of excellence in teaching and learning along with support activities.

Enhance college standing as the college of choice for students of the region.

Promote co-curricular activities for the overall personality development of the students.

Develop responsible citizenship through awareness and acceptance of value-based education.

Develop an environment-friendly campus.

Build alumni family to create a network of allegiance and support for college.

Total No. of Programs / Courses offered for the Academic Year 2018-19

Sl.No	Program Name	Course name	medium
1	B.A	Computer Application – Economics – Political Science	EM
2		Computer Application – History – Political Science	EM
3		Economics – History – Political Science	EM
4		History – Economics - Computer Application	EM
5		Economics – History – Political Science	TM
6		Economics – History – Public Administration	TM
7		Economics – Public Administration - Political Science	TM
8		History – Public Administration - Political Science	TM
9	B.Com	Computer Application	EM
10		General	EM
11		General	TM
12	B.SC	Botany –Zoology -Chemistry	EM
13		Mathematics –Physics –Computer Science	EM
14		Mathematics –Physics –Chemistry	EM
15		Botany –Zoology -Chemistry	TM
16		Mathematics –Physics –Chemistry	TM

CERTIFICATE COURSES :

ART & CRAFT

SKILL ENHANCEMENT COURSE(MS OFFICE)

BEAUTICIAN

ADDITIONAL FACILITIES AVAILABLE

TSKC

NCC (NATIONAL CADET CORPS)

NSS (NATIONAL SERVICE SCHEME)

MANA TV

INTERNAL COMPLAINCE COMMITTEE

RRC (RED RIBBON CLUB)

HEALTH CENTRE

WOMEN EMPOWERMENT CELL

ECO CLUB & CONSUMER CLUB

STAFF DETAILS

PRINCIPAL

SRI.P.NITHIN M.SC.PHYSICS

Sl.No	Name of the Faculty	Subject
1	Sri.M.Thirupathi	English
2	Dr.Sk.Basha	Hindi
3	Smt.N.Kiranmai	Telugu
4	Sri.R.Ramakrishna	Commerce
5	Sri.K.Arjun	Commerce
6	Smt.R.Thirumala	Commerce
7	Smt.R.Sunitha	Computers
8	Sri.A.Laxminarayana	Econonics
9	Sri.M.Venkataswamy	Pub.Admn
10	Sri.B.Surender	History
11	Dr.V.Srinivas	Mathematics
12	Sri.P.Nithin	Physics

13	Lt.R.Sanjeev	Chemistry
14	Sri.D.Ravinder Rao	Zoology
15	Dr.U.AnithaDevi	Botany
16	Sri.N.Manoj kumar	Botany
17	Sri.S.Srinivas	Librarian
18	Sri.P.Suman	TSKC Mentor

NON - TEACHING STAFF

Sl.No.	Name of the Employee	Designation
1	**Sri.M.BhanuVijayanand**	Administrative Officer
2	**Smt.Ed.Jayamani**	Senior Assistant
3	**Sri.B.Thirupathi**	Junior Assistant
4	**Sri. M.Ravinder**	Record Assistant
5	**Smt. M.Madhavi**	Office Subordinate
6	**Smt. M.Sathamma**	Office Subordinate

SYLLABII: Department of English

SEMESTER-I

Old Man at the Bridge	Emest Hemingway
India and Democracy	Dr. B. R. Ambedkar
The Scribe	Water de la Mare
The Never-Never Nest	Cedric Mount

SEMESTER-II

The reluctant Philanthropist	Gollapudi Srinivasa Rao
On Reading Books	Virginia Woolf
After Blenheim	Robert Southey
The Informer	Bertotlt Brecht

Semester III

The Touch	Abburi Chayadevi
To Students	MK Gandhi
The Bat Messenger	Jashuva
Ramanujan	Pratap Sehgal

Semester IV

Arjun	Mahasweta Devi
Woman	Ismat Chughtai
Father Returning Home	Dilip Chitre
Jatra	Arjun Deo Charan

తెలుగు విభాగం –(ద్వితీయ భాష) - సి.బి.ఎస్. సెమిస్టర్ విధానం

బి.ఎ./బి.కాం./బి.యస్సీ. & బి.బి.ఏం.

సెమిస్టర్ –I

యూనిట్ –I

1. శకుంతలోపాఖ్యానం - నన్నయ
2. గొడగూచి కథ - పాల్కురికి సోమనాథుడు

యూనిట్ –II

1. కాసులు - గురజాడ అప్పారావు
2. గంగిరెద్దు - డా.పల్లా దుర్గయ్య

యూనిట్ –III

1. రుద్రమదేవి (ఉపవాచకం) – ఒద్దిరాజు సీతారామచంద్ర రాయ శర్మ

యూనిట్ –IV

1. ముఖయంత్రం
2. ధ్వని – వర్ణ సమమ్నాయం

సెమిస్టర్ –II

యూనిట్ –I

1. గజేంద్రమోక్షం – బమ్మెర పోతన
2. సుభాషితములు – ఏనుగు లక్ష్మణ కవి

యూనిట్ –II

1. "ప్ర" పంచపదులు – డా. సి. నారాయణ రెడ్డి
2. ఆల్వీదా – కౌముది

యూనిట్ –III

1. యుగాంతం (కథానిక) – నెల్లూరి కేశవస్వామి
2. ఎంకన్న (కథానిక) – ఆచార్య పాకాల యశోదా రెడ్డి

యూనిట్ –IV

1. మామిడిపండు (వ్యాసం) - సురవరం ప్రతాప రెడ్డి
2. మా ఊరు పోయింది (వ్యాసం) – దేవులపల్లి వేంకట కృష్ణ శాస్త్రి

సెమిస్టర్ –III

యూనిట్ –I

1. ధర్మజుని వాక్చాతుర్యం – తిక్కన
2. గుణనిధి కథ – శ్రీనాథుడు

యూనిట్ –II

1. రైతు ప్రశస్తి – వనమామలై జగన్నాథ చార్యులు
2. గురుదక్షిణ – అంబటి లక్ష్మి నరసింహ రాజు

యూనిట్ –III

1. చలిచీమలు(ఉపవాచకం) - పి.వి.రమణ

యూనిట్ –IV

1. అర్థ విపరిణామం
2. తెలంగాణ జాతీయాలు

సెమిస్టర్ IV

యూనిట్ –I

1. వాగ్దాన భంగం – అసూరి మరిగంటి వేంకట నరసింహాచార్యులు
2. నారసింహ శతకం – ధర్మపురి శేషప్ప

యూనిట్ –II

1. గుడిసెలు కాలిపోతున్నై - డా.బోయి భీమన్న
2. దేవరకొండ దుర్గం – డా. ముకురాల రామారెడ్డి

యూనిట్ –III

1. అర్ధరాత్రి అరుణోదయం – దాశరథి రంగాచార్య
2. మన గ్రామనామాలు – డా. కపిలవాయి లింగమూర్తి

యూనిట్ –IV

1. నివురు తొలగిన నిప్పు – పోల్కంపల్లి శాంతాదేవి
2. కొండమల్లెలు – ఇల్లిందల సరస్వతి దేవి

FACULTY OF ARTS

PUBLIC ADMINISTRATION

SEMESTER – I [CBCS]

BASICS OF PUBLIC ADMINISTRATION

Module – I : Nature of Public Administration

a. Meaning and Importance of Public Administration
b. State and Evolution of Public aAdministration

Module – II : Relationship with Other Social Sciences

a. Law
b. Political Science
c. Economics
d. Psychology

Module – III : Oriental and Classical Approaches

a. Oriental Approach – Kautilya
b. Classical Approach : Henry Fayol, Luther Gulick and Lyndall Urwick
c. Scientific Management Approach : F.W.Taylor
d. Bureaucratic Approach : Max Weber and Karl Marx

Module – IV : Human Relations and Behavioral Appraoches

a. Human relations Approach – Elton Mayo
b. Behavioral Approach : Herbert A.Simon
c. Socio-Psychological Approach : Abraham Maslow, Mc Gregor, Rensis Likert

Module –V : Ecological and Social Justice Approaches

a. Administrative ecology : F.W.Riggs
b. Social Justice approach : B.R.Ambedkar
c. Jyothirao Pule

PUBLIC ADMINISTRATION
SEMESTER – II [CBCS]
DEVELOPMENT DYNAMICS AND EMERGING TRENDS

Module – I :Comparative and Development Administration

a. Comparative Administration
b. Development Administration
c. Changing Dynamics of Development Administration

Module – II : Emerging Trends – I

a. New Public administration – Minnowbrook – I
b. New Public administration – Minnowbrook – II
c. New Public administration – Minnowbrook – III

Module – III : Market Theories

a. Public Choice Approach
b. New Public Management

Module – IV : Emerging Trends – I

a. Public policy and Governance
b. Role of Public services in the Emergence and Development of New State of Telangana

Module – V : Emerging trends – II

a. Globalization and Public Administration
b. Present Status of Public Administration in the context of Globalization

PUBLIC ADMINISTRATION
SEMESTER – III [CBCS]
UNION ADMINISTRATION

Module – I : Historical background

a. Evolution of Indian Administration
b. Indian Administration after Independence : Continuity and change
c. Indian Constitutional Moorings and Administration

Module – II : Union Administration : Structure and Processes

a. Political executive at Central level
    I. President
    II. Prime Minister
    III. Council of Ministers
b. Central Secretariat and other offices

Module – III : Center –State Relations

a. Centre-State administrative relations
b. Central Personnel agencies – All India Services

Module – IV : Constitutional and Other National Bodies

a. Union Public Service Commission
b. Election Commission and Controller and Auditor General of India.
c. NITI Aayog

Module – V : Public Enterprises in India

a. Forms of Public Enterprises – Department, Corporation, Company
b. Performance and Disinvestment

RURAL INDUSTRALISATION
SEMESTER – I [CBCS]
PERSPECTIVES OF RURAL INDUSTRIALIZATION –I

Unit – I

Rural Industries Meaning & Concept – Classification of Industries – Rural Industries and their Importance in the Rural Economy. Swadeshi Movement and rural Industries Gandhian Constructive programme for Rural Development.

Unit - II

Factors which promoted Rural Industries.Factors which hindered the growth of rural Industries. Problems faced by the Rural Industries – Financial Institutions – IFC – SFC – IDBI – SIDBI – SIDCO. Role of Financial Institutions for Development of Rural Industries.

Unit – III

Rural Industries – Industrial Policies – Industrial Policy followed by British Government in Pre – Independent India. Industrial Policies – 1948-1977-1980 and 1991.Impact of New Economic policy on Rural Industries – Industrial Estates.

Unit - IV

Methods of Production – Labor & Capital Intensive – Vakil – Brahmanda Model – Planning - Importance of Planning – Steps taken by the Indian Govt. to promote Rural Industries in Recent Plans.

Unit – V

Conflict between Rural Industries and Large Scale Industries – Interdependence between industrial and other sectors – Impact of Globalization on Rural Economy.Rural Industries.

RURAL INDUSTRALISATION
SEMESTER – II [CBCS]
PERSPECTIVES OF RURAL INDUSTRIALIZATION – II

Unit-I

Growth, performance and problems of rural industrialization in India.Infrastructure, electrification, transport and communication.Employment and Income Generation from Non Form Sector in Rural Areas.

Unit-II

Location of Industries – Weber's theory and Sargant Florence's theories of Industrial location- Agglomeration – backwash and spread effects.

Unit-III

Causes for the Persistence of Poverty, Unemployment and Inequalities in Rural Areas - Obstacles to Industrial Development in Rural Areas, Economic and Non Economic Factors -Vicious Circles of Poverty - Market Imperfections

Unit-IV

Evolution of Various Strategies for Rural Development/Conflict of Interests between RuralIndustries and Urban Large Scale Industries.

Unit-V

Choice of Technology - Choice of Goods - Role of Government and Government Policy – Development of Rural technology – Appropriate technology – views of Gandhi, Mao and Schemputer.

ECONOMICS
SEMESTER – I [CBCS]
MICRO ECONOMICS - I

Unit – I :Demand Analysis

Introduction to Economics – Definition, Nature and Scope of Economics – Micro and Macro Economic Analyses – Concept of Demand and Law of Demand – Determinants of Demand – Types of Demand – Demand Function – Shifts in Demand – Concept of Supply and Law of Supply – Market Equilibrium – Elasticity of Demand – Price, Income and Cross Elasticities of Demand – Measurement Methods of Price Elasticity of Demand

Unit – II : Utility Analysis

Cardinal and Ordinal Utility Approaches – Law of Diminishing Marginal Utility – Law of EquiMarginal Utility – Consume r Surplus – Indifference Curve Analysis: Assumptions, Properties, Budget Line and Consumer's Equilibrium – Derivation of Demand Curve with the help of Indifference Curves – Price Effect, Income Effect and Substitution Effect

Unit – III :Production Analysis

Concepts of Production, Production Function and Factors of Production – Factor Payments: Rent, Wages, Interest and Profit – Law of Variable Proportions – Isoquant, Isocost Curves and Producer's Equilibrium – Laws of Returns to Scale – Economies and Diseconomies of Scale – Cost Analysis: Total, Average and Marginal Cost Curves in Short Run and Long Run – Revenue Analysis: Total, Average and Marginal Revenue Curves – Relationship among Average Revenue, Marginal Revenue and Elasticity of Demand

Unit – IV : Market Structure Analysis- I

Concepts of Firm, Industry and Market – Classification of Markets – Objectives of the Firm – Equilibrium of a Firm – Pe rfect Competition: Concept, Characteristics, Equilibrium of Firm and Industry during Short Run and Long R un – Monopoly: Concept, Types, Characteristics and Equilibrium of the Firm – Price Discrimination – Comparison between Perfect Competition and Monopoly

Unit – V : Market Structure Analysis – II

Monopolistic Competition: Concept, Characteristics, Equilibrium of the Firm and Selling Costs – Oligopoly: Concept, Characteristics and Price Rigidity – Kinky Demand Curve – Duopoly: Concept and Characteristics – Cournot Model

ECONOMICS
SEMESTER – II [CBCS]
MICRO ECONOMICS - II

Unit – I : Introduction

Meaning, Nature & Scope and Importance of Macro Economics – Concept of Circular Flow of Incomes – Macro Economic Paradox – National Income Analysis: Concepts and Components – Methods of Measure ment – Importance of and Difficulties in the Estimation of National Income – Limitations of National Income as a Measure of Welfare – Social Accounting

Unit – II :Theories of Income and Employment

Classical Theory of Employment: Say's Law of Markets and Pigou's Wage Cut Policy – Keynesian Theory of Income and Employment: Effective Demand, Aggregate Demand Function and Aggregate Supply Function – Consumption Function: Average Propensity to Consume (APC) and Marginal Propensity to Consume (MPC) – Factors Determining Consumption Function – Savings Function: Average Propensity to Save and Marginal Propensity to Save – Concepts of Multiplier, Accelerator and Super-Multiplier

Unit – III : Investment & Theories of Interest Rate

Capital and Investment: Types of Investment, Determinants of Level of Investment – Marginal Efficiency of Capital – Ex-Post and Ex- Ante Investment and Savings – Classical, Neo-Classical and Keynesian Theories of Inte rest – Simultaneous Determination of Interest and Real Income through IS -LM Frame work in a Closed Economy

Unit – IV :Supply of Money & Demand for Money

Meaning, Functions and Classification of Money – Money Supply: Measures – Measures of Money Supply with reference to India: M1, M2, M3 and M4 – Classical Theories of Money: Fisher's and Cambridge Versions of Quantity Theory of Money – Keynes' Theory of Money and Prices.

Unit – V :Inflation & Trade Cycles

Inflation: Concept, Types, Causes and Measurement –Effects (Consequences) of Inflation – Measures to Control Inflation – Concepts of Phillips Curve, Deflation and Stagflation – Trade Cycles: Concept, Nature, Causes, Phases and Remedial Measures.

ECONOMICS
SEMESTER – III [CBCS]
MICRO ECONOMICS - III

Unit – I :Market StructureAnalysis - II

Monopoly: Concept, Types, Characteristics and Equilibrium of the Firm - Price Discrimination -Comparison between Perfect Competition and Monopoly

Unit –II : Market Structure Analysis - II

Monopolistic Competition: Concept, Characteristics, Equilibrium of the Firm and Selling Costs –Oligopoly:Concept, Characteristics and Price Rigidity - Kinky Demand Curve - Duopoly: Concept and Characteristics- Cournot Model

UNIT-III: Pricing strategies

Pricing practices: Cost plus pricing, Marginal cost pricing, Rate of return pricing, Product life pricing, Priceskimming, Penetration pricing, Markup pricing, State intervention and Administered prices.

UNIT - IV: Distribution and Factor pricing

Functional and Personal Distribution, Marginal Productivity theory of Distribution, Ricardo theory of Rentand Quasi rent, Theories of Wages, Theories of Profit, Risk and uncertainty, Concept of interest.

UNIT - V: Theories of International Trade

The basis of International Trade; Classical Theories of Trade- Adam Smith, Ricardo; Modern Theories ofTrade - Hecksher and Ohlin Model; Factor Price Equalization Theorem; Rybezynski Theorem, LeontiefsParadox.

POLITICAL SCIENCE

SEMESTER – I [CBCS]
CONCEPTS, THEORIES AND INSTITUTIONS

Unit I
Introduction: Definition, Scope and Importance of Political Science. Evolution of Political Science.Political Science as a Science.

Unit II
Political Science- Relations with other Social Sciences: History, Economics and Sociology.

Unit III
Approaches to the Study of Politics: Liberal, Marxist, Behavioural.

Unit IV
State; Nation; Civil Society.

Unit V
Theories of Origin of the State: Divine, Evolutionary (Historical) and Social Contract.

POLITICAL SCIENCE

SEMESTER – II [CBCS]

CONCEPTS, THEORIES AND INSTITUTIONS

Unit I

Sovereignty: Monism and Pluralism.

Unit II

Ideologies: Individualism, Marxism, Anarchism, Fascism and Socialism.

Unit III

Concepts: Law: Sources of Law, Rule of Law. Power, Authority and Legitimacy.Citizenship Aspects Liberty and Equality Their Relationship.Theories and kinds of Rights; Human Rights.

Unit IV

Forms of Government: Democracy: Direct and Indirect. Unitary and Federal.Parliamentary and Presidential.

Unit V

Organs of Government: Theory of Separation of Powers (Montesquieu) A. Legislature : i) Unicameral and Bi-cameral - Powers and Functions. B. Executive : i) Powers and Functions. C. Judiciary : i) Powers and Functions. ii) Independence of Judiciary, Judicial Review.

HISTORY
SEMESTER – I [CBCS]
HISTORY OF INDIA
(From earliest times to c.700 CE)

Module – I

Definitions – Nature and Scope of History – History and its relationship with other Social sciences – Geographical features of India – Sources of Indian History : Pre-history – Paleolithic, Mesolithic, Neolithic, Chalcolithic and Megalithic cultures

Module – II

Indus valley civilization – its features and decline : Early vedic and later vedic civilizations – Vedic literature – Society – Economy – Polity – Religion

Module – III

Rise of New religious movements – Charvakas, Lokayathas, Jainism and Buddhism ; Mahajanapadas – Rise of Magadha; Alexander's invasion and its impact

Module – IV

Foundation of the Mauryan Dynasty; Ashoka and his dharma – Polity – Administration – Society – Economy – Religion – Literature – Art and architecture; Disintegration of the Mauryan empire; Post- Mauryan kingdoms – Indo Greeks – Kushanas and Kanishka – Society – Economy – Literature – Art and architecture; The Satavahanas; Sangam Age – Literary development

Module – V

Gupta Empire : A brief political survey – Polity and administration, Social and economic conditions, Agriculture and Land grants – Feudalism, Caste system, Position of women, Education, Literature, Science and technology, Art and architecture – Harshavardhana and his achievements.

HISTORY
SEMESTER – II [CBCS]
HISTORY OF INDIA
(From c.700 CE to 1526 CE)

Module – I

Rise of regional states : Pallavas, Chalukyas of Badami, Rashrakutas, Cholas; Local SelfGovernment under Cholas; Society, Economy, Literature, Art and architecture; Bhakti Movement in South India; Shaiva Nayanars and Vaishnava Alwars

Module – II

Arab Conquest of Sind, Ghaznavids and Ghoris; Foundation of Delhi Sultanate; Slave, Khaljis, Tuglaqs, Sayyids and Lodis – Polity, Administration, Society and Economy – Art and architecture – Growth of Education and Literature – Religious conditions

Module – III

Bhakti and Sufi Movements and their Impact on Society and culture – Emergence of Composite Culture

Module – IV

Kakatiyas – Polity – Administration – Society and Economy – Literature and Religion – Art and architecture – Yadavas – Hoysalas and Pandyas – Brief History

Module – V

Vijayanagara – Polity – Administration – Society and Economy – Religion – Art and architecture – Language and Literature – Bahamanis and their Contribution to the Deccan Culture

HISTORY
SEMESTER – III [CBCS]
HISTORY OF INDIA
(From 1526 to 1857 CE)

Module – I

Establishment of Mughal Dynasty – Sources – Shershah Sur and his reforms – Brief survey of Political History of Mughals – Akbar, Shah Jahan and Auragazeb - Polity – Administration – Society – Economy – Technological developments – Religion – Hindu Muslim relations – Emergence of Composite Culture – Education – Language and Literature – Art and architecture – Disintegration of Mughal Empire

Module – II

Rise if Regional Powers – Marathas – Shivaji and his administration – Peshwas – Sikhs

Module – III

Advent of European powers – Portugese, Dutch, English and French, Anglo French Rivalry – Expansion and Consolidation of British power – Wellesley's Subsidiary Alliance – Dalhousie's Doctrine of Lapse.

Module – IV

Three stages of Colonialism – Mercantilism – Free trade policies – Finance Capital – Land revenue settlements – Cornwallis and permanent revenue settlement ; Thomas Munroe and Ryotwari; Mahalwari system – Changes in the Agrarian Economy and Condition of Peasantry

Module – V

Decline of Rural Cottage industries and urban handicrafts – Growth of railways, Roads, Communication – Modern industries – Coal Mines, Textiles, Iron and steel etc., Anti colonial upsurge – 1857 revolt – Nature, Causes and results

TELANGANA STATE
B.A. (HISTORY) SYLLABUS
Semester - IV
History of India (1858-1964 CE)
Discipline Specific Course - Paper – IV

Module-I: Queen's Proclamation – Beginning of Colonial Rule – Introduction of Western
Education – Role of Christian Missionaries – Press, Communication and Emergence of Middle Classes - Lytton and Rippon: Impact of their Policies.
Module-II: Socio-Religions Reform Movements – Brahma Samaj - Arya Samaj - Theosophical
Society - Ramakrishna Mission - Aligarh Movement; Anti-Caste Movements - Jyotibha Phule - Narayana Guru - Periyar Ramaswamy Naicker and Dr. B.R. Ambedkar.
Module-III: Factors for the Rise of Nationalism – Formation of Indian National Congress –
Three Phases of Freedom Struggle: Moderate Phase, Extremist Phase and Gandhian
Era - Non-Cooperation, Civil Disobedience and Quit Indian Movement; Indian National Army and Subhash Chandra Bose.
Module-IV: Revolutionary Movement: Gadhar Party – Bhagath Singh – Chandra Sekhar Azad
and Others; Left-Wing Movement – Rise of Socialist and Communist Parties - Peasant and Workers Movements.
Module-V: Emergence of Communal Politics and Mohd. Ali Jinnah – Prelude to Partition of
India - Sardar Vallabhai Patel and Integration of Princely States into Indian Union –
Republic of India – Jawaharlal Nehru and His Policies.

TELANGANA STATE
B.A. (HISTORY) SYLLABUS
Semester - V
World History (1453-1815 CE)
Discipline Specific Course (DSC) – Paper – V

(CBCS - 2018-2019)

Module-I: Fall of Constantinople (1453 C.E.) – Beginning of Modern Age in Europe –Geographical Discoveries and Scientific Inventions and their impact on Society –Rise of New Ideas – Spirit of Humanism – Renaissance – Meaning-Causes andResults – Impact of Renaissance on Europe.

Module-II: Reformation Movement – Causes – Martin Luther, John Calvin and Zwingli;Counter Reformation Movement and Ignatius Loyola – Results of Reformation andCounter Reformation.

Module-III: Emergence of Nation States – Causes – Spain – Charles V; England – Henry VIII -Glorious Revolution (1688); France under Bourbons – Louis XIV; Era ofEnlightened Despotism – Peter the Great and his Policies – Frederick the Great andhis Achievements.

Module-IV: End of Feudalism – Industrial Revolution – Causes for Industrialization in Englandand Europe – Textile Industry – Working Class Movement – American War ofIndependence (1776) – French Revolution (1789) –

Causes, Course, Results and itsImpact. Factors for the Rise of Napoleon – Domestic and Foreign Policies – Fall ofNapoleon.

TELANGANA STATE
B.A. (HISTORY) SYLLABUS
Semester - V
History of Telangana (From Earliest Times to 1724 CE)
Discipline Specific Elective (DSE) - Paper - I (A)
(CBCS - 2018-2019)

Module-I: Sources – Archaeological and Literary Sources - Geographical Features ofTelangana - Pre History – The Age of Satavahanas – Origin – Administration - Society and Economy – Religion - Language & Literature - Art & Architecture

Module-II: Post-Satavahana Period - Ikshvakus – Vishnukundins – A Brief Political History –Society – Economy – Religion - Language & Literature - Art & Architecture –Origin and Early History of Chalukyas of Badami and their Contribution toCulture - Chalukyas of Vemulavada & Mudigonda - Political History – Society –Economy – Religion - Language & Literature - Art & Architecture.

Module-III: Kakatiyas – Origin and Early History – Ganapatideva, Rudramadevi andPrataparudra - Administration - Society – Economy – Language & Literature - Art & Architecture – Sammakka-Sarakka Revolt - Post-Kakatiya Political Developments – Musunuri Nayakas, Recherla Rulers – Their Contribution to Culture.

Module-IV: Qutb Shahis of Golconda – Origin and Political History – Society – Economy -Agriculture – Irrigation – Trade & Commerce – Religion – Language & Literature– Art & Architecture – Political Conditions in Telangana from 1687 to 1724 – Lifeand Times of Sarvai Papanna.

TELANGANA STATE
B.A. (HISTORY) SYLLABUS
Semester - VI
World History (1815-1950 CE)
Discipline Specific Course – (DSC) - Paper - VI
(CBCS - 2018-2019)

Module-I: Congress of Vienna (1815) – Principles and Impact; Metternich and his System –1830 and 1848 French Revolutions: Unification of Italy – Role of Joseph Mazzini,Count Cavour and Garibaldi; Unification of Germany – Role of Bismarck;Significance of the Unification Movements.

Module-II: Factors responsible for the outbreak of First World War (1914-18) – Results –Treaty of Versailles – Its Provisions and Consequences; Russian Revolution(1917) – Causes – The role of Lenin – Results; League of Nations (1920) – ItsAchievements and Failures.

Module-III: Europe between World Wars: Turkey under Mustafa Kamal Pasha - The GreatEconomic Depression and its Impact - Mussolini and the Rise of Fascism in Italy -Hitler and Nazism in Germany - Militarism in Japan.

Module-IV: Second World War – Causes and Results; Establishment of United NationsOrganization (1945) – Its Aims and Achievements; Cold War and Its Impact;Colonization of Asia - India and China under Colonial Rule, Role of

Gandhi inIndian National Movement (1920-1947); Sun-Yat-Sen and His Ideas; Role of Mao-Tse-Tung in Chinese Revolution – 1949.

TELANGANA STATE
B.A. (HISTORY) SYLLABUS
Semester - VI
History of Telangana (1724-2014 CE)
Discipline Specific Elective – (DSE) - Paper - II (A)
(CBCS - 2018-2019)

Module-I: Foundation of Asaf Jahi Dynasty – Nizam-ul-Mulk to Mir Mahaboob Ali Khan – Nizam-British Relations – Salarjung Reforms - Modernization of Hyderabad – 1857 Revolt andAdivasi Rebellion – Ramji Gond – Rekapalli Revolt - The Rule of Mir Osman Ali Khan –Agriculture, Irrigation, Modern Industries and Economic Development – Coal Mines,Railways, Roads, Posts and Telegraph – Educational Reforms – Osmania University –Public Health.

Module-II: Social, Cultural and Political Awakening in Telangana – Press, Journalism and LibraryMovements – Arya Samaj and Its Activities – Ittehad-ul-Muslimeen – Bhagya ReddyVerma and Dalit Movements - The Role of Andhra Maha Sabha – Hyderabad State Congress – Political Developments in Hyderabad State – Administrative and Constitutional Reforms – Mulki-Non-Mulki Issue 1930 – Vandemataram Movement – Communist Party and Its Activities – Andhra Mahila Sabha and Women's Movement.

Module-III: Anti-Nizam and Anti-Feudal Struggles – Telangana Peasants Armed Struggle 1946-51 –Revolt by Kumaram Bheem – Razakars and Their Activities – Police Action, 1948 –Formation of Popular Ministry in 1952 – Assertion of Mulki Identity and the City CollegeIncident 1952 – Merger of Telangana and the Formation of Andhra Pradesh 1956.

Module-IV: Discrimination, Dissent and Protest – Violation of Gentlemen's Agreement – Agitation forSeparate Telangana State: Formation of Telangana Praja Samithi – Role of Intellectuals,Students and Employees in 1969 Movement - Second Phase Movement for SeparateTelangana – Formation of Various Associations – Telangana Aikhya Vedika – TelanganaJana Sabha - Telangana Rashtra Samithi 2001 - Role of Osmania and Kakatiya University Students and Others - Formation of Telangana Political Joint Action Committee and Its Role in the Movement - Mass Mobilization – Sakala Janula Samme – Million March – Sagara Haram, Chalo Assembly – Sri Krishna Committee and Its Recommendations – December 2009 Declaration and Later Developments - The

Formation of Telangana State, June 2014.

Deapartment of Mathematics

I Semester

DifferentialCalculus

Unit-I

Successivedifferentiation-Expansions of Functions-Meanvaluetheorems

Unit-II

Indeterminateforms-CurvatureandEvolutes

Unit-III

Partialdifferentiation-Homogeneousfunctions- Totalderivative.

Unit-IV

MaximaandMinimaoffunctionsoftwovariables–Lagrange'sMethodofmultipliers – Asymptotes- Envelopes.

Text:

Shanti Narayan and Mittal, DifferentialCalculus

II Semester

DifferentialEquations

Objective: Themainaimof thiscourseistointroduce thestudentstothetechniques of solving differentialequations andtotraintoapplytheirskillsinsolvingsomeoftheproblemsofengineering andscience.

Outcome: Afterlearning thecoursethestudentswillbeequipped withthevarioustoolstosolve fewtypes'differential equations thatariseinseveralbranches ofscience.

Unit-I

Differential Equationsoffirst order and first degree: Exact differential equations - Integrating Factors -Change in variables–Equations-Simultaneous Total Differential Equations-Equationsofthe form $\frac{dx}{P}=\frac{dz}{Q}=\frac{}{R}$. Differential Equationsfirst order but not of firstdegree: EquationsSolvablefory-EquationsSolvableforx-Equationsthatdonot contain x(ory)-Clairaut's equation.

Unit-II

Higher order linear differential equations: Solution ofhomogeneous linear differential equations withconstantcoefficients-Solutionofnon-homogeneousdifferentialequations P(D)y=Q(x)with constantcoefficientsbymeansofpolynomialoperators whenQ(x)=be^{ax},bsinax/bcosax,bx^{k},Ve^{ax}.

Unit-III

Method ofundeterminedcoefficients-Method ofvariationofparameters-Linear differential equations withnonconstantcoefficients-TheCauchy -EulerEquation.

Unit-IV

PartialDifferentialequations-Formationandsolution-Equationseasilyintegrable - Linearequations offirst order - Non linear equations offirst order - Charpit's method - Homogeneous linear partial differentialequations withconstantcoefficient-Nonhomogeneouslinearpartial differential equations - Separationofvariables.

Text:
•ZafarAhsan,DifferentialEquations andTheir Applications

III Semester

Real Analysis

Objective: Thecourseisaimedatexposingthestudentstothefoundationsofanalysiswhichwill beusefulinunderstandingvariousphysical phenomena.

Outcome:Afterthecompletion ofthecoursestudentswillbeinaposition toappreciatebeauty andapplicabilityofthecourse.

Unit-I

Sequences:LimitsofSequences-ADiscussionaboutProofs-Limit TheoremsforSequences-Monotone SequencesandCauchy Sequences.

Unit-II

Subsequences-Lim supsandLimINF's-Series-AlternatingSeriesandIntegral Tests.

Unit-III

SequencesandSeriesofFunctions:PowerSeries-UniformConvergence-MoreonUniformConvergence-DifferentiationandIntegrationofPowerSeries(Theoremsinthissectionwithout Proofs).

Unit-IV

Integration: The RiemannIntegral-PropertiesofRiemann Integral-FundamentalTheorem of Calculus.

Text:•Kenneth ARoss, ElementaryAnalysis-The TheoryofCalculus

Department of Physics

Semester – I

Paper– I:Mechanics

Unit – I

1. Vector Analysis(13)

ScalarandVectorfields,GradientofaScalarfieldanditsphysicalsignificance.DivergenceandCurlof aVectorfieldandrelatedproblems.Vectorintegration,line,surfaceandvolumeintegrals. Stokes‟, Gauss‟sand Green‟s theorems-simple applications.

Unit – II

2. Mechanics ofParticles(7)

Lawsofmotion,motionofvariablemasssystem,motionofarocket,multi-stagerocket,conservationof energyandmomentum.

Collisionsintwoandthreedimensions,conceptofimpactparameter,scattering cross-section.

3. Mechanics ofRigidBodies (6)

DefinitionofRigidbody,rotationalkinematicrelations,equationofmotionforarotatingbody,angular momentumand inertial tensor. Euler‟sequation,precession ofatop, Gyroscope.

Unit – III

4. CentralForces (13)

Central forces– definition and examples, conservativenatureof central forces, conservative forceasa negativegradient of potential energy, equation ofmotion undera central force,gravitational potential and gravitational field, motion underinversesquarelaw, derivation ofKepler‟slaws, Coriolis force andits expressions.

Unit – IV

5. Specialtheory ofRelativity (13)

Galilean relativity, absolute frames, Michelson-Morley experiment, Postulates of special theory of relativity.

Lorentztransformation,timedilation,lengthcontraction,additionofvelocities,mass-energy relation.Concept of fourvector formalism.

Semester – II

PaperII::Waves andOscillations

Unit I

Fundamentals of Vibrations (13):

Simpleharmonicoscillator,andsolutionofthedifferentialequation– PhysicalcharacteristicsofSHM, torsionpendulum, - measurementsofrigiditymodulus, compoundpendulum,measurementof„g", combinationoftwomutually perpendicularsimpleharmonicvibrationsofsamefrequency anddifferent frequencies,Lissajous figures

Unit-II

Dampedand forcedoscillations (13)

Damped harmonic oscillator, solution of the differential equation of damped oscillator. Energy considerations,comparisonwithundammed harmonic oscillator,logarithmic decrement,relaxationtime, quality factor,differentialequation offorcedoscillatoranditssolution,amplitude resonance, velocity resonance. Coupled Oscillators.

Unit III

Vibrating Strings (13)

Transverse wave propagation along a stretched string, general solution of wave equation and its significance,modesofvibrationofstretchedstringclampedatends,overtones,energy transport, transverseimpedance.

Unit IV

Vibrations ofbars(13)

Longitudinalvibrations in bars-waveequationand its general solution. Special cases(i)bar fixed at both endsii) bar fixedatthemidpointiii)bar freeatbothendsiv)barfixedatone end. Transverse vibrations inabar-waveequationanditsgeneralsolution. Boundaryconditions,clampedfreebar,free-freebar, bar supportedat both ends, Tuningfork.

Semester – III

Paper– III::ThermalPhysics

Unit– I

1. Kinetictheory ofgases: (4)

Introduction–
DeductionofMaxwell‟slawofdistributionofmolecularspeeds,TransportPhenomena– Viscosityof gases– thermal conductivity– diffusion of gases.

2. Thermodynamics: (9)

Basics of Thermodynamics-Kelvin‟sand Clausius statements – Thermodynamic scale of temperature –Entropy,physicalsignificance–Changeinentropy inreversible andirreversibleprocesses– Entropy and disorder–Entropy ofuniverse–Temperature-Entropy(T-S)diagram–Changeofentropy ofaperfectgas- changeofentropywhen ice changesinto steam.

Unit– II

3. ThermodynamicpotentialsandMaxwell'sequations: (7)

Thermodynamic potentials– Derivation of Maxwell‟sthermodynamic relations – Clausius-Clayperon‟sequation–Derivationforratioofspecificheats–
Derivationfordifferenceoftwospecificheatsforperfect gas. JouleKelvin effect– expression for JouleKelvin coefficient for perfect and Vanderwaal‟sgas.

4. LowtemperaturePhysics: (6)

JouleKelvineffect–liquefactionofgasusingporousplugexperiment.Jouleexpansion – Distinctionbetweenadiabatic and Joule Thomson expansion– Expression forJouleThomsoncooling–Liquefactionof helium,Kapitza‟s method– Adiabaticdemagnetization–Productionoflowtemperatures–Principleof refrigeration, vapourcompression type.

Unit– III

5. Quantumtheory ofradiation: (13)

Blackbody-Ferry‟sblackbody–distributionofenergyinthespectrumofBlackbody–Wein‟sdisplacement
law,Wein‟slaw,Rayleigh-Jean‟slaw–Quantumtheoryofradiation-Planck‟slaw–deductionofWein‟s law, Rayleigh-Jeanslaw, Stefan‟slawfrom Planck‟slaw.Measurement ofradiation usingpyrometers – Disappearing filamentopticalpyrometer–experimentaldetermination–Angstrompyroheliometer-determination ofsolar constant,effectivetemperatureofsun.

Unit– IV

6. Statistical Mechanics: (13)

Introduction, postulatesof statistical mechanics. Phase space, concept of ensembles and some known
ensembles ,classical and quantum statistics and their differences, concept of probability, Maxwell-
Boltzmann‟sdistributionlaw-Molecularenergiesinanidealgas-Maxwell-Boltzmann‟svelocitydistribution
law,Bose-Einstein Distribution law, Fermi-DiracDistribution law, comparisonof threedistribution laws, Applicationof B-Edistribution toPhotons-Planksradiationformula,ApplicationofFermi-Diracstatisticsto whitedwarfsand Neutronstars.

Suggested books

1. Fundamentals ofPhysics. Halliday/Resnick/Walker.*C.Wiley India Edition 2007*.
2. SecondYearPhysics– *TeluguAcademy.*
3. ModernPhysicsbyR.MurugeshanandKiruthigaSivaPrasath(forstatisticalMechanics) *S.Chand &Co*.
4. ModernPhysicsbyG.Aruldhas and P. Rajagopal,*Eastern EconomyEducation*.
5. BerkeleyPhysics Course. Volume-5.StatisticalPhysicsbyF. Reif.*The McGraw-HillCompanies*.
6. An Introduction to ThermalPhysics byDanielV. Schroeder.*Pearson Education Low PriceEdition*.
7. ThermodynamicsbyR.C. Srivastava, SubitK. Saha&AbhayK.*Jain Eastern EconomyEdition.*
8. ModernEngineering Physics byA.S. Vasudeva.*S.Chand&Co. Publications*.
9. Feyman's Lectures onPhysicsVol. 1,2,3&4.*Narosa Publications*.

10. Fundamentals ofOptics byJenkins A. Francis and WhiteE. Harvey,*McGrawHillInc.*
12. B.B. Laud "Introduction to statisticsMechanics"(Macmillan 1981)
13. F.Reif:"StatisticalPhysics "(Mcgraw-Hill,1998)
14. K.Haung: "StatisticalPhysics "(WileyEastern 1988)

Semester – IV
Paper– IV:: Optics

Unit I:

1.Interference: (13)

Principle of superposition – coherence – temporal coherence and spatial coherence – conditions for Interferenceoflight. Interferencebydivisionofwavefront:Fresnel‟s biprism–determinationofwavelengthoflight. Determination of thicknessof atransparentmaterialusing Biprism–changeof phaseonreflection–Lloyd‟s mirrorexperiment.

Interferenceby divisionofamplitude:Obliqueincidenceofaplanewaveonathinfilmduetoreflectedand transmittedlight(Cosinelaw)–Coloursofthinfilms–Non-reflectingfilms– interferenceby aplaneparallel filmilluminatedby apointsource– Interferencebyafilmwithtwonon-parallelreflectingsurfaces(Wedge shapedfilm)– Determinationofdiameterofwire-

Newton‟sringsinreflectedlightwithandwithoutcontact betweenlensandglassplate,Newton‟sringsintransmittedlight(HaidingerFringes) – Determinationof wavelengthofmonochromaticlight –MichelsonInterferometer – typesoffringes– Determinationof wavelengthof monochromaticlight,Difference inwavelengthof sodiumD_1,D_2lines and thicknessofathin transparent plate.

Unit II:

2.Diffraction: (13)

Introduction–

DistinctionbetweenFresnelandFraunhoferdiffraction,Fraunhoferdiffraction:-

Diffractionduetosingleslitandcircularaperture–Limitofresolution–

Fraunhoferdiffractionduetodoubleslit–Fraunhofer diffraction pattern with N slits(diffraction grating).Resolving Powerofgrating–Determinationof wavelengthof

lightinnormal andobliqueincidencemethods usingdiffraction grating.Fresnel diffraction-Fresnel‟shalfperiod zones– areaofthehalfperiod zones –zoneplate– Comparisonof zoneplatewith convex lens– Phasereversal zoneplate– diffractionatastraight edge– differencebetween interferenceand diffraction.

Unit III:

3.Polarization (13)

Polarizedlight:MethodsofPolarization,Polarizatioinbyreflection,refraction,Doublere fraction,selective

absorption , scattering of light – Brewster‟slaw – Maluslaw – Nicol prism polarizer and analyzer – Refractionofplanewaveincidenton negativeandpositivecrystals(Huygen‟sexplanation)–Quarterwave plate,Halfwaveplate–Babinet‟scompensator–

Opticalactivity,analysisoflightbyLaurent‟shalfshade polarimeter.

Unit IV:

4.AberrationsandFiberOptics: (13)

Introduction–Monochromaticaberrations,sphericalaberration,methodsof minimizingsphericalaberration, coma, astigmatismand curvature of field, distortion. Chromatic aberration– the achromatic doublet – Removal ofchromaticaberration ofaseparateddoublet.

FiberOptics:Introduction–Opticalfibers–Typesofopticalfibers–

Stepandgradedindexfibers–Rays andmodesinanopticalfiber–Fiber material– Principlesofopticalfibercommunication andadvantagesof opticalfibercommunication.

Suggested books

1. Optics byAjoyGhatak.*TheMcGraw-Hillcompanies*.
2. Optics bySubramaniyam and Brijlal.*S. Chand &Co*.
3. Fundamentals ofPhysics. Halliday/Resnick/Walker.*C.Wiley India Edition 2007*.
4. Optics andSpectroscopy. R. Murugeshan and KiruthigaSiva Prasath.*S. Chand&Co*.
5. SecondYearPhysics– *Telugu Academy.*
6. ModernEngineering Physics byA.S. Vasudeva.*S.Chand&Co. Publications*.
7. Feyman's Lectures onPhysicsVol. 1,2,3&4.*Narosa Publications.*
8. Fundamentals ofOptics byJenkins A. Francis and WhiteE. Harvey,*McGrawHillInc.*
9. K. Ghatak, PhysicalOptics'

10. D.P. Khandelwal, Opticaland Atomic Physics‟ (Himalaya PublishingHouse, Bombay,1988)
11. Jenkins andWhite:„FundamentalofOptics‟‟(McGraw-Hill)
12. Smith andThomson:„Optics‟‟(John Wileyandsons).

Theory Paper –III
Electricity, Magnetism and Electronics

Unit – I

1. Electrostatics (10 periods)

Gauss lawand itsapplications-Uniformlycharged sphere,charged cylindrical conductor and an infiniteconducting sheet ofcharge. Deduction ofCoulmb's law fromGausslawMechanicalforceonachargedconductor Electricpotential– Potentialdue toa chargedsphericalconductor,,electricfieldstrengthfromthe electricdipoleandaninfinitelineofcharge. Potentialofauniformlycharged circular disc.

2. Dielectrics (5 periods)

Anatomicviewofdielectrics, potentialenergyofadipoleinanelectricfield. Polarizationand chargedensity,Gauss'slawfordielectricmedium–Relation betweenD,E,andP. Dielectricconstant,susceptibilityandrelationbetween them.Boundaryconditionsatthedielectricsurface.Electricfieldsincavitiesof a dielectric-needle shaped cavity and disc shaped cavity.

3. Capacitance (8 periods)

Capacitance ofconcentricspheresandcylindricalcondenser,capacitanceof parallel platecondenserwithandwithoutdielectric. Electric energystoredina charged condenser–forcebetween platesofcondenser, construction

andworking ofattracteddiscelectrometer, measurementofdielectricconstantand potential difference.

Unit – II

1. Magnetostatics (6 periods)

Magnetic shell–potentialduetomagneticshell–fieldduetomagneticshell– equivalentofelectriccircuitandmagneticshell–Magneticinduction(B)and field (H) –permeability and susceptibility–Hysteresis loop.

2. Moving charge in electric and magnetic field (8 periods)

Motion of charged particles in electric and magnetic fields. Hall effect, cyclotron, synchrocyclotron and synchrotron –force on a current carrying conductor placed in a magnetic field, force and torque on a current loop, Biot –Savart's lawand calculation of B due to long straight wire, a circular current loop and solenoid.

3. Electromagnetic induction (10 periods)

Faraday's law–Lenz's law–expressionforinducedemf–timevarying magnetic fields –Betatron –Ballistic galvanometer –theory –damping correction –self and mutualinductance,coefficientofcoupling,calculationofselfinductanceofa long solenoid–toroid–energystoredinmagneticfield–transformer– Construction, working, energy losses and efficiency.

Unit – III

1. Varying and alternating currents (10 periods)

Growthanddecay ofcurrentsinLR,CRandLCRcircuits–Criticaldamping. Alternatingcurrent relationbetweencurrentandvoltageinpureR,CandL- vector diagrams–Powerinaccircuits. LCR series andparallelresonantcircuit– Q-factor. AC & DC motors-single phase, three phase (basics only).

2. Maxwell's equations and electromagnetic waves (10 periods)

Areviewofbasiclawsofelectricity andmagnetism–displacementcurrent– Maxwell'sequations indifferentialform–Maxwell'swaveequation,plane electromagnetic waves–Transversenatureofelectromagneticwaves,Poynting theorem, production of electromagnetic waves (Hertz experiment)

Unit – IV

1. Basic Electronics (15 periods)

Formation of energy bands insolids, classificationof solidsin terms of forbidden energygap.Intrinsic andextrinsicsemiconductors,Fermilevel,continuity equation – p-n junctiondiode,half waveand fullwave rectifiersand filters,ripple factor(quantitative),CharacteristicsofZener diode anditsapplicationasvoltage regulator.–pnpandnpntransistors,current componentsintransistors, CB,CE andCCconfigurations–concept oftransistorbiasing,operatingpoint,fixedbias andselfbias(Qualitativeonly),transistorasanamplifier —conceptofnegative feedbackandpositivefeedback–Barkhausencriterion,RCcoupledamplifier and phase shift oscillator (qualitative).

2. Digital Principles (8 periods)

Binarynumbersystem,convertingBinarytoDecimalandviceversa. Binary addition and subtraction (1's and 2's complement methods). Hexadecimal number system.ConversionfromBinarytoHexadecimal –viceversaand Decimal to Hexadecimal vice versa.Logic gates: OR,AND,NOT gates, truth tables, realization of these gates using discrete components. NAND, NOR as universal gates, Exclusive – OR gate, DeMorgan'sLaws –statementandproof,HalfandFulladders. Paralleladder circuits.

Textbooks:

1. Modern Physicsby R.Murugeshan and Kiruthiga SivaPrasath –*S. Chand&Co.*for semi conductor & Digital Principles)
2. Fundamentals of Physics-Halliday/Resnick/Walker -*Wiley India Edition2007.*
3. BerkeleyPhysicsCourse–Vol.II-ElectricityandMagnetism–EdwardM Purcell – *The McGraw-Hill Companies*.
4. Electricity and Magnetism– D.N. Vasudeva.*S.Chand&Co.*
5. Electronic devices and circuits – Millman and Halkias. *Mc.Graw-HillEducation.*
6. Electricity and Magnetism Brijlal and Subramanyam.*Ratan Prakashan Mandir.*
7.Digital Principles and Applicationsby A.P. Malvino and D.P.Leach. *McGrawHill Education.*

B.Sc. (Physics)
Paper VII Modern Physics

Unit – I

Atomic Spectra

Introduction –Drawbacks of Bohr's atomic model - Sommerfeld's elliptical orbits –relativistic correction (noderivation). Stern&Gerlach experimentVector atom modelandquantumnumbersassociatedwithit.L-S andj-jcouplingschemes.Spectralterms, selectionrules,intensityrules.Spectraofalkaliatoms,doublet finestructure.Alkalineearth spectra,singlet andtripletfinestructure. Zeeman Effect, Paschen-Back Effect and Stark Effect (basic idea).

Molecular Spectroscopy:

Types ofmolecularspectra,purerotationalenergies andspectrumofdiatomic molecule, determinationofinternucleardistance.Vibrational energiesand spectrumofdiatomicmolecule.Ramaneffect,Classicaltheory ofRamaneffect. Experimental arrangement for Raman Effect and its applications.

Unit – II:

Quantum Mechanics

Inadequacy of classical Physics: (Discussion only)

Spectral radiation–Planck'slaw.Photoelectriceffect–Einstien'sphotoelectric equation.Compton'seffect (quantitative) experimentalverification.Stability of an atom –Bohr's atomic theory.Limitations of old quantum theory.

Matter Waves:

de Broglie's hypothesis – wavelength of matter waves, properties of matter waves. Phaseandgroupvelocities.DavissonandGermerexperiment. Double slit experiment. Standing de Brogile waves of electron in Bohr orbits.

Uncertainty Principle:

Heisenberg's uncertainty principlefor position and momentum(xand p_X), Energy and time (Eand t). Gammaray microscope.Diffraction by a single slit. Position of electron in a Bohrorbit.Particle in a box.Complementary principle of Bohr.

Schrodinger Wave Equation:

Schrodinger timeindependent and time dependent wave equations. Wave function properties– Significance. Basic postulatesof quantum mechanics. Operators, eigenfunctionsand eigenvalues,expectationvalues. Applicationof Schrodingerwaveequationtoparticleinoneand threedimensionalboxes, potential step and potential barrier.

Unit – III

Nuclear Physics

Nuclear Structure:

Basicpropertiesofnucleus–size,charge,mass,spin,magneticdipolemoment andelectricquadrupolemoment. Bindingenergyofnucleus,deuteronbinding energy, p-p and n-p scattering (concepts),nuclear forces.Nuclear models– liquid drop model, shell model.

AlphaandBeta Decays: Rangeofalphaparticles,Geiger–Nuttallaw. Gammow's theory ofalphadecay.Geiger–Nuttallaw fromGammow'stheory.Beta spectrum –neutrino hypothesis, Fermi's theory

of -decay(qualitative).**NuclearReactions**:Types ofnuclearreactions,channels,nuclearreaction kinematics. Compound nucleus, direct reactions (concepts).**NuclearDetectors** –GM counter, proportional counter, scintillationcounter, Wilson cloud chamber and solid state detector

Unit – IV

Solid State Physics

CrystalStructure: Crystallinenatureofmatter. Cystal lattice,UnitCell, Elementsofsymmetry.Crystal systems,Bravaislattices.Millerindices.Simple crystal structures (S.C., BCC, CsCl, FCC, NaCl diamond and Zinc Blends)

X-ray Diffraction: DiffractionofX –rays by crystals, Bragg'slaw,Experimental techniques - Laue's method and powder method.

Nanomaterials: Introduction,nanoparticles, metalnanoclusters,semiconductor nanoparticles, carbonclusters,carbon nanotubes,quantumnanostructures– nanodot, nanowire and quantum well. Fabrication of quantum nanostructures.

BondinginCrystals: Typesofbonding incrystals–characteristics ofcrystals withdifferent bindings.Latticeenergyofioniccrystals–determinationof Medelung constant forNaClcrystal, calculationofBorncoefficientand repulsive exponent. Born –Haber cycle.

Magnetism: Magneticpropertiesofdia,paraandferromagneticmaterials. Langevin's theoryofparamagnetism.Weiss'theoryofferromagnetism– Conceptsofmagneticdomains,antiferromagnetismandferrimagnetism ferrites and their applications.

Superconductivity:

Basic experimentalfacts–zero resistance,effectofmagneticfield,Meissner effect,persistentcurrent,IsotopeeffectThermodynamic properties,specificheat, entropy. Type I and Type II superconductors. ElementsofBCStheory-Cooper pairs.Applications.Hightemperature superconductors (general information)

Textbooks

1. **Modern Physics** by G. Aruldhas & P. Rajagopal.*Eastern Economy Edition*.

2. **Concepts of Modern Physics** by Arthur Beiser.*Tata McGraw-Hill Edition*.
3. **Modern Physics** by R. Murugeshan and Kiruthiga Siva Prasath.*S. Chand*
4. **Nuclear Physics**by D.C. Tayal,*Himalaya Publishing House.*

Syllabus for Computer Science for B.Sc Programme Under Choice Based Credit System

B.Sc. (Computer Science) – I Year (I Semester)

Programming in C

Unit : I

Fundamentals of Computers : Computer Definition, Types of computers, Block diagram of computer (Memory, Input and Output devices). Operating system: Definition, Types and functions of Operating systems. Introduction to OS: DOS Internal and External Commands. Introduction to Windows Desktop, File, Folder, My Computer, My documents, Recycle bin, Internet Explorer and Windows Explorer. Programming concepts: Algorithm and its Characteristics, pseudo code / flow charts, program, compilers and interpreters.

Unit – II :

Introduction to C: Concept of Structured programming, Implementation of Structured programming, Introduction to the C language – Background, C programs, Identifiers, Types, Variables, Constants, Input / output statements, Operators(Arithmatic, relational, logical, bitwise, etc.,), Expressions, Precedence and Associativity, Expression evaluation, type conversions, statements – Selection statements, making decisions – if and switch statements, repetition statements, loops, while, for, do-while statements, loop examples, other statements related to looping break, continue, goto, simple C programs examples. One dimensional array , character array, function from ctype.h, string.h, multidimensional array.

Unit – III :

Functions – designing functions, user defined functions, inter function communication, standard functions, scope, storage classes – auto, register, static, extern, scope rules, type qualifiers, recursion-recursive functions, limitations of recursion, Example C programs, Call by value vs Call by reference, passing array to functions. Pointers in C – Introduction , address of operator(&), Array and pointers, pointer and string, pointer to pointers, array of pointers, pointer to array, Dynamic memory allocation

Unit – IV

User defined data, datatypes (structures and unions) : Declaration, initialization, accessing members, array of structures, structures vs Unions, Enumeration types, Files in C: Introduction, Using files in C, Working with text files, working with binary files, randon access files, Other file management functions. Commad line arguments, preprocessor commands

Books recommended :

1. Computer science : A structured programming approach using C, B.A.Forouzan and R.F Gilberg, third edition, Cengage learning
2. Programming in C, P.Dey and M Ghosh, Oxford University Press
3. Fundamentals of Computers – Reema Thareja, Oxford University press
4. Introduction to computers – Peter Norton, Tata Mc Graw Hill

References :

Programming in Ansi C by Balaguruswamy 7^{th} edition Tata Mcgraw Hill

I Year (II Semester)

Object Oriented programming in C++

Unit – I :

Introduction to OOP.Identifies, variables, constants, data types-simple data types, floating data types, character data types, string data types, enumeration type, variables and constant declarations. Input and Output statements. Basic concepts of OOP, Benefits and applications of OOP, Objects and classes- instance variables, methods, inline functions, message passing, polymorphism, static and dynamic binding, inheritance, function overloading, operator overloading

Unit-2:

Classes: introduction, defining an instance of a class, constructors, passing arguments to constructors, destructors, overloading constructors, private member functions, arrays of objects, abstract array data types, instance and static members, friends of classes, member wise assignment, copy constructors, operator overloading object conversion, aggregation operators: types of operators, operator precedence, expressions, input using the extraction operator (>>) and cin, output using the insertion operator (<<) and cout, preprocessor directives, creating a C++ program. Branching statements (if and if … else statement, switch, nested if, conditional operator, goto statement), looping statements (for, while and do-while), break and continue statement.

Unit-3:

Categories of functions (value returning functions, void functions, value versus reference parameters), recursion, local and global variables, static and automatic

variables, one dimensional array, two dimensional array, character array, pointer data and pointer data and pointer variables. Inheritance: introduction, protected members and class access. Base class access specification, constructors and destructors in base and derived classes redefining base class functions class hierarchies, polymorphism and virtual member functions abstract base classes and pure virtual functions multiple inheritance C++ streams classes unformed I/O operations formattes I/O operations

Unit-4

Exceptions: introduction throwing and exception handling an exception object oriented exception handling with classes multiple exceptions extracting data from the exception class, rethrowing an exception handling the bad_alloc exception templates function templates-introduction function templates with multiple type overloading with function templates class templates – introduction, defining obhects of the class template, class templates and inheritance introduction to the STL.

Books Recommended

1. Object Oriented Programming with C++ 4th edition by E. balaguruswamy, publisher, tata McGraw-Hill education 2008
2. Richard Johnson, an introduction to object-oriented application development Thomson learning.2006
3. B. Stroupstrup, the C++ programming language addison Wesley 2004
4. Programming in C++ D. Ravichandran McGraw-Hill

II Year (III Semester)

DSC-3C –Data Structures using JAVA

UNIT-I

Overview of Java, Java (JRE and JDK), Installation of java, Byte Code, Data Types and Variables, Control Statements, Operators, Classes and Objects, Declaring classes, Class members, Interface and Enums. Object Orientation, Encapsulation, Inheritance, Polymorphism, Strings, String Buffer. Exceptions, Exception Handling, Deadlock.

UNIT-II

Fundamental Concepts: Introduction to Data Structures, Types of Data Structures, Introduction to Algorithm, Pseudo code, Flow Chart, Analysis of Algorithms. Linear Data Structure using Arrays: 1-D Arrays, 2-D Arrays, N-D Arrays, Concepts of ordered List, Pros and Cons of Arrays. Stacks: Concepts, Primitive Operations, Abstract Data Type, Representation Stacks using Arrays, Prefix, Infix, Postfix Notations for Arithmetic Expression, Applications of Stacks – Converting Infix Expression to Postfix Expression, Evaluating the Postfix Expression.

UNIT III:

Recursion: Introduction, Use of Stack in Recursion, Variants of Recursion, Execution of Recursive Calls, Recursive of Recursive Calls, Recursive Functions, Iteration versus Recursion. Queues: Concepts, Primitive Operations, Abstract Data Type, Representation Queues Using Arrays, Circular Queue Double Ended Queue, Applications of Queues. Linked Lists: Introduction, Concept, Terminology, Primitive Operations- Creating, Inserting, Deleting, Traversing, Representation of

Linked Lists, Linked List Abstract Data Type, Linked List Variants Singly Linked List, Doubly Linked List, Linear and Circular Linked List, Representation Stacks and Queues Using Linked Singly Lists, Application of Linked List.

UNIT IV:

Trees: Introduction, Representation of a General Tree, Binary Tree Introduction, Binary Tree Abstract Data Type, Implementation of Binary Trees, Binary Tree Traversals- Preorder, Inorder, Postorder Traversals, Applications of Binary Trees Briefly. Graphs: Introduction, Graph Abstract Data Type, Representation of Graphs, Graph Traversal- Depth-First Search, Breadth-First Search, Spanning Tree-Prim's Algorithm, Kruskal's Algorithm. Searching and Sorting: Sequential (Linear) Search, Binary Search, Bubble Sort, Insertion Sort, Selection Sort, and Quick Sort, Merge Sort and Comparison of Sorting Techniques. Heaps: Concepts, Implementation, Heap Sort.

Reference Books:

E.Balaguruswamy, Programming with Java, A primer, 3e, TATA McGraw-Hill Company (2008).

Robert Lafore, Data Structures & Algorithms in java, Second Edition, Pearson Education (2008).

John R.Hubbard, Prog. with Java, Second Edition, Schaum's Outline Series, Tata McGrawhill (2007).

II Year (IV Semester)

DSC-3D-Database Management System

UNIT-I

Introduction to Databases: Introduction, Traditional File-Based Systems, Database Approach, Roles in the Database Environment, Advantages and Disadvantages of DBMS, The Three – Level ANSI-SPARC Architecture, Database Languages, Data Models, Functions of a DBMS, Components of a DBMS Relational Model: Introduction, Terminology, Integrity constraints, Views. The Relational Algebra: Unary Operations, Set Operations, Join Operations, Division Operation, Aggregation and Grouping Operations

UNIT-II

Entity-Relationship Modeling: Entity Types, Relationship Types, Attributes, Keys, Strong and Weak Entity Types, Attributes on Relationships, Structural Constraints, Problems with ER Models-Fan Traps, Chasm Traps. Enhanced Entity-Relationship.Modeling: Specialization/Generalization, Aggregation, Composition. Functional-Dependencies: Anomalies, Partial Functional Dependency, Transitive Functional Dependency, Multi valued Dependency, Join Dependency. Normalization: The Purpose of Normalization, How Normalization supports Database Design, Data Redundancy and update Anomalies, Functional Dependencies in brief, the process of Normalization, 1NF, 2NF, 3NF, BCNF. The Database Design Methodology for Relational Databases (Appendix-D).

UNIT-III

SQL: Introduction, Data Manipulation-Simple Queries, Sorting Results, Using the SQL Aggregate Functions, Grouping Results, Sub-Queries, ANY and ALL, Multi-Table Queries, EXISTS and NOT EXIST, Combining Result Tables, Database Updates SQL: The ISO SQL Data Types, Integrity Enhancement Feature- Domain Constraints, Entity Integrity, Referential Integrity, General Constraints, Data Definition-Creating a Database, Creating a Table, Changing a Table Definition, Removing a Table, Creating an Index, Removing an Index, Views-Creating a View, Removing a View, View Resoultion, Restrictions on Views, View Updatability, WITH CHECK OPTION, Advantages and Disadvantages of views, View Materialization, Transactions, Discretionary Access Control-Granting Privileges to Other Users, Revoking Privileges from Users Advanced SQL: The SQL Programming Language – Declarations, Assignments, Control Statements, Exceptions, Cursors, Subprograms, Stored Procedures, Functions and Packages, Triggers, Recursion.

UNIT-IV

Transaction Management: Transaction Support-Properties of Transactions, Database Architecture, Concurrency Control-The Need for Concurrency Control, Serializability and Recoverability, Locking Methods, Deadlock, Time Stamping Methods, Multi-Version Timestamp Ordering, Optimistic Techniques, Granularity of Data Items, Database Recovery- The Need for Recovery, Transactions and Recovery, Recovery Facilities, Recovery Techniques, Nested Transaction Model. Security: Database Security-Threats, Computer-Based Controls-Authorization, Access Controls, Views, Backup and Recovery, Integrity, Encryption, RAID.

Text Book:

1. Thomas M.Connolly, Carolyn E.Begg, Database Systems-A Practical Approach to Design, Implementation and Management (6e)

References:

1. Sharon Allen, Evan Terry, Beginning Relational Data Modeling
2. Jeffrey A.Hoffer, V.Ramesh, Heikki Topi, Modern Database Management
3. Raghu Ramakrishnan, Johannes Gehrke, Database Management Systems

2. Michel Kifer, Arthur Bernstein, Philip M.Lewis, Prabin K.Pani Graphi, Database Systems : An application oriented approach, Second Edition, Pearson Education (2008).
3. Atul Kahate, Introduction to Database Management Systems, Pearson Education (2006).

Syllabus for Computer Science
For B.Sc Programme under Choice Based Credit System
B.Sc (Computer Science) – III year (V SEMESTER)

OPERATING SYSTEM (Core Subject)

Theory: 4 credits (4 Hours/Week)
Practical: 1 credit (2 Hours/week)

Unit I:
Introduction: Evolution of OS, Types of OS, Basic h/w support necessary for modern operating systems, services provided by OS, system programs and system calls.
Unit II:
Scheduling: Process concept, Process control block, Types of scheduler, Context switch, Multithreading model, Goals of scheduling and different scheduling algorithms, Examples of WINDOWS Server & LINUX.
Unit III:
Memory management: Contiguous allocation, Relocation, Paging, Segmentation, Demand paging, Page faults, Page replacement algorithms, working sets, Locality, Thrashing.
Unit IV:
Process cooperation and synchronization: Concurrency conditions, Critical section problem, software and hardware solution, Semaphores, conditional critical regions and monitors, Classical Inter process Communication Problems.
Deadlocks & Protection: Deadlock definition, Prevention, Avoidance, Detection and recovery.

Text Books:
1. Silberchatz and Galvin, Operating System concepts; 6th Edition; John Wiley and Sons, 2001.
2. Tanenbaum; Modern Operating Systems; 2nd Edition; PHI, 2001.

Department of Chemistry

SEMESTER I

PAPER – I

Chemistry-I

Unit-I (Inorganic Chemistry) **15h (1 hr/week)**

S1-I-1. P-block Elements- I 7 h

Oxides: Types of oxides (a) Normal- acidic, amphoteric and neutral (b) Mixed (c) sub oxide d) peroxide e) superoxide. Structure of oxides of C, N, P, S and CI- reactivity, thermal stability, hydrolysis.

oxy acids: Structure and acidic nature of oxyacids of B, C, N, P, S and Cl. Redox properties of oxyacids of Nitrogen: HNO2 (reaction with FeSO4, KMnO4, k2Cr2o7) HNO3 (reaction with H2S, Cu), HNO4. (reaction with KBr, Aniline), H2N202 (reaction with KMnO4). Redox properties of oxyacids of Potasium: H3PO2 (reaction with HgCl2), H3PO3 (rcaction with AgNO3, CuSO4). Redox properties of oxyacids of Sulphur: H2SO3 (reaction with KMno4, K2Cr2O7), H2SO4 (reaction with Zn, Fe, Cu) H2S208 (reaction with Cu, Au), H2SO5 (reaction with KI, FeSO4), H2S2O8 (reaction with FeSO4 KI).

Interhalogens - classification- general preparation- structures of AB,AB3, AB5 and AB7 type and reactivity. Poly halides - definition and structure of ICI2, ICI4 and I3 . Comparison of Pseudohalogens with halogens.

S2-I-2 Chemistry of Zero group elements General preparation, structure, bonding and reactivity of Xenon compounds – Oxides, Halides and Oxy – halides. Clatherate compounds and Anomalous behavior of He (II).

S2-1-3 Chemistry of d-block elements Characteristics of d-block elements with special reference to electronic configuration variable valence, ability to form complexes, magnetic properties & catalytic properties. Stability of various oxidation states and SRP Comparative treatment of second and third transition series with their 3d analogues.Study of Ti, Cr and Cu traids.Titanium triad - electronic configuration and reactivity of +3 and +4 states - oxides and halides.Chromium triad - reactivity of +3 and +6 states. Copper triad reactivity of +1, +2 and +3 states.

Unit - Il (Organic chemistry)

Concept of aromaticity - definition, Huckel's rule - application to Benzenoids and Non Benzenoids (cyclopropenyl cation, cyclopentadienyl anion and tropylium cation) **Preapartions**: From acetylene, phenols, benzene carboxylic acids and sulphonic acids

Reactions - General mechanism of electrophilic substitution, mechanism of nitration, sulphonation, and halogenation, Friedel Craft's alkylation (polyalkylation) and acylation. Orientation of aromatic substitution Definition of ortho, para, and meta directing groups. Ring activating and deactivating groups with examples. Orientation (i) activating groups: Amino, methoxy and a groups. (ii) Deactivating groups carboxy, nitro, nitrile, carbonyl and sulphonic acid & halo groups.

S2-O-2: Arenes and Polynuclear Aromatic Hydrocarbons

Preparation of alkyl benzenes by Friedel Craft's alkylation, Friedel Craft's acylation followed by reduction, Wurtz-Fittig reaction. Chemical reactivity: Ring substitution reactions, side chain substitution reactions and oxidation. Polynuclear hydrocarbons - Structure of naphthalene and anthracene (Molecular orbital diagram and resonance energy) Reactivity towards elcctrophilic substitution. Nitration and sulphonation as examples

S2-O-3: Halogen compounds Nomenclature and classification: alkyl (primary, secondary, tertiary), aryl, aralkyl, allyl, vinyl, benzyl. Chemical reactivity - reduction, formation of RMgX, Nucleophilic substitution reactions - classification into SN1 and SN2 Mechanism and energy profile diagrams of SN1 and SN2 reactions. Stereochemistry of SN2 (Walden Inversion) 2-bromobutane , (Racemisation) 1- bromo -1-phenylpropane explanation of both by taking the example of optically active alkyl halide. Structure and reactivity - Ease hydrolysis - comparison of alkyl, vinyl, allyl, l, and benzyl halides.

Unit III (Physical Chemistry)

S2-P-1: Solutions

Liquid liquid mixtures, ideal liquid mixtures, Raoult's and Henry's laws.Non ideal systems.Azeotropes HCl-H20 and C2H5OH - H20 systems. Fractional distillation,.Partially miscible liquids- Phenol - Water, Trimethyl amine - Water and Nicotine - Water systems.Lower upper consolute temperatures.Effect of impurity on consolute temperature. Immiscible liquids and steam distillation. Nernst distribution law Calculation of the partition coefficient. Applications of distribution law with solvent extraction.

S2-P-2: Dilute Solutions & Colligative Properties

Dilute Solutions, Colligative Properties, Raoult's law, relative lowering of vapour pressure, molecular weight determination. Osmosis - laws of osmotic pressure, its measurement, determination of molecular weight from osmotic pressure. Elevation of boiling point and depression of freezing point.Derivation of relation between molecular weight and elevation in boiling point and depression in freezing point.Experimental methods for determining various colligative

properties.Abnormal molar mass, Van't hoff factor, degree of dissociation and assocoation of solutes.

S2-P-3: Solid state Chemistry

Laws of Crystallography - (i) Law of Constancy of interfacial angles (ii) Law of Symmetry, Symmetry elements in crystals (iii) Law of rationality of indices. Definition of space lattice, unit cell.Bravais Lattices and Seven Crystal systems (a brief review). X- ray diffraction by crystals; Derivation of Bragg's equation, Determination of structure of NaCl, KCI & CsCl (Bragg's method and Powder method).

Unit IV (General Chemistry)

S2-G-1: Theory of Quantitative Analysis

Volumetric Analysis: Introduction, standard solutions, indicators, end point, titration curves, Types of titrations: i)neutralization titration- principle, theory of acid base indicators, titration curves and selection of indicators- strong acid - strong base, strong acid -weak base, weak acid- strong base and weakticid -weak base. Gravimetric analysis - Introduction, nucleation, precipitation, growth of precipitate, filtration and washing, drying and incineration of precipitate, coprecipitation and post precipitation. Determination of Ni2+

S3-G-2: Theories of bonding in metals: Valence bond theory, Explanation of metallic properties and its limitations, Free electron theory, thermal and electrical conductivity of metals, limitations, Band theory, formation of bands, explanation of conductors, semiconductors n-type and p-type extrinsic & intrinsic semiconductors, and insulators.

S2-G-3: Material Science

Classification of materials classification as metals, ceramics, organic polymers, composites, biological materials etc.The property of super conductivity of materials.Super conducting materials- elements, alloys and compounds. Properties of super conductors zero resistivity, Meisener effect thermal properties. Composites- and meaning of composites, advanced composites, classification - particle rein forced fiber reinforced and structural composites general characters of composite mate reinforced composites large particle and dispersion- composite. Fiber reinforced composites (continuous and discontinuous fiber composites)

Unit IV

1. Vogel's Text Book of Quantitative Analysis by G.H.Jeffery, J.Bassett, J.Mendham and R.C. Denney 5th edn Addison Wesley Longman Inc. 1999.
2. Quantitative Analysis by Day and Underwood Prentice Hall (India VI Edn..
3. Nano: The Essentials by T. Pradeep, McGraw-Hill Education.

4. Chemistry of nanomaterials: synthesis, Properties and applications by CNR Rao et al.
5. Nanostructured Materials and Nanotechnology, edited by Hari Singh Nalwa, Academic Press
6. College Practical chemistry by v K Ahluwalia, Sunitha Dhingra and Adarsh Gulati

B.Sc II yr CHEMISTRY
SEMSTER WISE SYLLABUS
SEMSTER III
Paper-III
Chemistry-III

Unit-I (Inorganic Chemistry)

S3-1-1: Chemistry of f - block elements:

Chemistry of Lanthanides: Position in periodic table, Electronic structure, oxidation state, ionic and atomic radii- lanthanide contraction- cause and consequences, anomalous behavior of post lanthanides-complexation- type of donor ligands preferred. Magnetic properties paramagnetism. Colour and spectra, f-f transitions -occurrence and separation-ion exchange method, solvent extraction.

Chemistry of actinides- general features-electronic configuration, oxidation state actinide contraction, colour and complex formation. Comparison with lanthanides.

S3-1-2: Symmetry of molecules:Symmetry operations and symmetry elements in molecules. Definition of Axis of symmetry types of C_n, Plane of symmetry (oh, ov, od) Center of symmetry and improper rotational axis of symmetry (S_n). Explanation with examples.

S3-1-3: Non-aqueous solvents

Classification and characteristics of a solvent.Reactions in liquid ammonia-physical properties, auto-ionisation, examples of ammono acids and ammono bases.Reactions in liquid ammonia-precipitation, neutralization, solvolysis, solvation solutions of metals in ammonia, complex formation, redox reactions.Reactions in HF-autoionisation, reactions in HF- precipitation, acid-base reactions, protonation.

Unit II (organic chemistry)

S3-0-1: Alcohols

Preparation: 1°, 2° and 3° alchols using Griganard reagent, Ester hydrolysis, Reduction of Carbonyl compounds, carboxylic acids and esters. Physical properties: H-bonding, Boiling point and solubility. Reactions with sodium, $HX/ZnCl_2$ (Lucasreagent), esterification, oxidation with PCC, alk.$KMn0_4$, acidic

dichromates, conc. HNO_3 and Oppenauer oxidation. Diols: Pinacol pinacolone rearrangement**Phenols:** Preapartion: (i) from diazonium salts of anilines, (ii) from benzene sulphonic acids and (iii) Cumene hydroperoxide method. Properties: Acidic nature, formation of phenoxide and reaction with R-X, electrophilic substitution nitration, halogenation and sulphonation. Riemer Tiemann reaction, Gattermann-Koch reaction, Azo-coupling reaction, Schotton-Boumann raction, Houben- Hoesch condensation, $FeCl_3$ reaction.

S3-0-2: Ethers and epoxide Nomenclature, preparation by (a) Williamson's synthesis (b) from alkenes by the action of conc. H_2S0_4. Physical properties-Absence of Hydrogen bonding, insoluble in water, low boiling point. Chemical properties inert-nature, action of conc. H_2SO_4 and HI

S3-O-3 Carbonyl compounds

Nomenclature of aliphatic and aromatic carbonyl compounds and isomerism. Praparation of aldehydes & ketones from acid chloride, l ,3-dithianes, nitriles and from carboxylic acids. Special methods of preparing aromatic aldehydes and ketones by (a) oxidation of arenes (b) Hydrolysis of benzal halides Physical properties absence of Hydrogen bonding. Keto-enol tautomerism, polarisability of carbonyl groups, reactivity of the carbonyl groups in aldehydes and ketones. Chemical reactivity: Addition of [a] $NaHSO_3$ (b) HCN (c) RMgX (d) NH_3 (e) RNH_2 (f)NH_2OH (g) $PhNHNH_2$ (h) 2,4DNP (Schiff bases). Addition of H_20 to form hydrate (unstable), comparison with chloral hydrate (stable), addition of alcohols hemi acetal and acetal formation. Base catalysed condensation, reactions with mechanism- Aldol, Cannizaro reaction, Perkin reaction, Benzoin condensation, haloform reaction, Knoevengeal condensation. Oxidation reactions $KMn0_4$ oxidation and auto oxidation, reduction-catalytic hydrogenation, Clemmenson's reduction, Wolf- kishner reduction, Meerwein Pondoff Verly reduction, reaction with LAH, $NaBH_4$. Analysis 2,4 -DNP test, Tollen's test, Fehlings test, Scihff's test, haloform test (with equations).

UNIT –III (Physical Chemistry)

S3-P-1: Phase Rule

Statement and meaning oft he terms Phase, Component and degrees of freedom, Gibb's Phase rule, phase equilibria of one component system. water system. Phase equilibria two- component system Solid-Liquid equilibria, simple eutextic – Pb-Ag system. desilverisation of lead, Solid solutions compound with congruent melting point-Mg-Zn system and incongruent melting point NaC1-H_20 system.

S3-P-2: Colloids & surface chemistry

Definition of colloids.Classification of colloids. Solids in liquids (sols): preparations and properties (including Kinetic, optical and Electrical stability of

colloids) Protective action. Hardy-Schultz law, Gold number, Liquids in liquids (emulsions): Types of emulsions, preparation and usilier. Liquids in solids (gels: Classification, preparations and properties. General applications of colloids

Micelles: Classification of surface active agents. Surfactant action, micellization and micellar interactions, Structure of micelles spherical and laminar. Critical micellar concentration (CMC).Factors affecting the CMC of surfactants. Counter ion binding to micelles

Adsorption: Types of adsorption, Factors influencing adsorption, Freundlich adsorption isotherm Langmuir theory of unilayer adsorption isotherm. Applications.

Unit –IV (General Chemistry)

S3-G-1: Nanomaterials:

Nano structured materials Definition, size, description of graphene, fullerenes, carbon nano tubes. Synthetic techniques.Bottom-up-sol-gel method, top down, electro deposition method. Production of carbon nano method tubes arc discharge, laser vapourization methods. General applications nano materials.

S3-G-2: Stereochemistry of carbon compounds

Isomerism: Definition of isomers. Classification of isomers: Constitutional and Stereoisomers definition and examples. Constutional isomers: chain functional and positional isomers. Stereoisomers: enanti ers and diastercomars definition and examplesOptical activity: Definition, wave nature of light, plane polarised light, optical rotation and specific rotation, chiral centers. Chiral molecules: definition and criteria absence of plane, center and s_n axis of symmetry asymmetric and dissymmetric molecules. Examples of asymmeuric molecules (Glyceraldehyrde, Lactic acid, Alanine) and disymmetric molecules (trans-1,2-dichlorocyclopropane), Molecules with constitututionally unsymmetrical chiral carbons (Tartaric acid) Molecules with constitutionally unsymmetrical chiral carbons (2,3-dibromopentane) Number of enantiomers and mesomers-calculation. D. L &, R. S configuration for asymmetric al disymmetric molecules (Allenes, spiro compounds and biphenyls), Cahn-Ingold-Prelog rules. Racemic mixture, Racemisation and Resolution techniques. Geometrical isomerism with reference to alkenes and cyclo alkanes- cis, trans and E,Z configuration.

S3-G-3: Conformational analysis

Classification of steroisomers based on energy. Definition and examples of conformational and configurational isomers. Conformational analysis of ethane, n-butane,1,2-dichloroethanal and methyl cyclohexane 2-dichlorocthane,

B.Sc II yr CHEMISTRY
SEMSTER WISE SYLLABUS
SEMSTER IV
Paper-IV
Chemistry-IV

Unit-I (Inorganic Chemistry)

S4-I-1: Coordination Compounds - I

Simplc inorganic ecules and coordination complexes. Nun erielalune TUPAC niles,Bmer Teview of Wemer N uheory, S elecururi tilenTrelatinn and EAN rule end their limitations. (Valence hond theury postulates and application to ja) tctralbodr complexes UNi NH3) [NiCit] and Nicol.l fib) square anar complexes al (c) octalkedral complexks LF (CN)s. Ni(UN) Fe(CN)s LFcFal ICo(NHUfil ICo T. Limitations of VRT), 2. Coordination number coordination goo tries of mcta ons, types of ligands, 3, Isom Sull n coordination ompounds. stereo jsomerism (a) com isomcrism in (in square planar etal ctrical complexes ot the type LMA B2 LMA2BCJI UM(AB)2. LMABCDI. (ii) Octatucdial metal plUNts of the type LMA4B J. LMIAA)2B2 J. LMA B! using able examples, (t) Oplical isotteristti in (i). tetrahedral complcxcs lMLABCDl. (ii). Octahedral cumplexes M(AA) 1, [M (AA) 1 using suitable examples Suructura isomerism: ionization, linkage, ciordinatinn liganud izumerixm using suitable examples

S4-1-2 organometallie Chemistry Definition, ure and classification of organomctallic compounds. Methods of preparation, properties and applications of alkyl ancl aryl compoutlus ol Li, Mg & Al PreTaration umd Properlies offerTruxene

SA-I-3: Metal carbonyls and related compounds

18 valence eleuurun rule.classification of metal carbonyls: NiICO).. Telcos, Telco)o

UNIT – II (Organic Chemistry)

Carboxylie acids and derivatives 6 h SI-O. Nomenclature, classification and methods ofprepaTatinm ay Hydrolysis of Nitriles, amidcs and esters, b) Carbonation of Grignand reagents, Special methods of prcparation of Aromatic Acids, Oxidation of tho side chain of Arencs, Hydrolysis of benzorichlorides Kolbe reaction. Physical properties- hydrogen bonding, dincric association, acidity strength of acids with the examples of trimcthyl acctic acid and trichloro acetic acid Relative differences in the acidity of Aromatic.aliphatic acids & phenols. Chemical properties Reactions involving II, OH and Cooll groups -NalL formation, anhydride formation, Acid halide formalion, Eslerification (mechanism & Amide

fomation Reduction of acid to the coresponding primary alcohol via cster or acid chloridc Degradation of carboxylic acids by Hums Dicckcr reaction. Schmidt reaction (Decarboxylation).Arndt Eistcrt synthesis, Halogenation by Hell Volhard Lclcnsky reaction. Carboxylic acid Derivativcs Rcactions of acid halidcs, Acid anhydrides, acid amides and esters (mechanism of ester hydrolysis by basc and acid)

S4-O-: Synthesis based on Carbanions

Acidity of Hydrogens of withdrawing groups.structure of varbanion. PreTaration of Accto acctic cstci (ethylacctocster) by Claisen n and sy n of Accto acctic cst (a) Acid hydrolysis and ketonic hydrolysis: But one, 3-Methyl 2 bitanonc, Preparation of (i) monocarboxylic act ds ii) dicarboxylic acids (b) itualonic ester synthetic applications, Preparation of (i) substitutod mono carboxylic acids and (ii) tcd dicarboxy acjds .

S4-O-3 Nitro hydrocarbons:

Nomenclature and classification nf nitro hydrncartynns. Stiuci arc, Tautomeu ist DL mitmyalkanes leading to aci and keka fum. PreTaralion of Nitroalkanes. Reactivity halogenation, reaelion with HNO (Ni Lruus acid): Nof rcaction, Maitnie reactiotu Michae aldi Lion nd reduction. Ark atie Nitrn ydrocarbons None erLelature Preparaliun of Nitrnbenzeme by Nitra n. Physical prmpcrtics, chcmical reactivily orientalion of eutrophi suhsLitulion un nitrohenyene. Reduction reaction Nitrobenzelles it different media

Unit III (Physical Chemistry)

S4-P-1: Electrochemistry & EMF

Electrical ransport conduction in metals and in eleetnolytc olutions, specific tunduk lance and equivalent conductance, measurement nf equivalent conductance, variation ur speuilic and equivalent conducLance with dilutinn. Migration of ions and Kholrausch aw, Arrhenius theory electrolyle dissukiatinn and its Jimitations, weak und strong electrolykes, Oslwald's dilution law, it uses and limitations, Debyc Huckel OnsagaT's equation for strong electrolyles elementary treatment only). Transport nunher, definition and determination by Hillorf's method tor attackable clecuodes Application of conductivity measurem Detemination nf degra: of dissociation determi KI of acids, determinatio solubility product nf a sparingly solublc ialt, cunducto LiLraliotus

Electrolyte and Galvanic cells reversible and irreversible cells, conventional represenlaliun of eleuurychemical cells. EMF of a cell and ils measurement. Computatinn of EMT. Types of reversible electrodes- the gas elec metal-metal ion, metal true, insoluble salt and redox electrodes. Electrode reactions, Nemat equation, cell EMF and single electrode potential, standard Ilydrogen electroule

reference electrodes (calamot electrode) standard electrode potential, sign conventions, electrochemical series and its significance

Applications of EMI measurements, Calculatio ur thermodynamic quantities of cell and quinhydrone electrude, Solubility product of AgC1. Potentiometrie titrations

Unit-IV (General Chemistry)

S4-G-1: Pericyclic Reactions

ConcertEd reactions, Molecular orbitals of ethene. 1,3-butadiene and ally radical Symmetry properties, HOMO, LUMO. Thermal and photochemical pericyclic reactions Types ut pericyclic reactions electrocyclic, cycloaddition and sigmatropic reactions one example each and their explanation by FMO theory.

S4-G-2: Synthetic Strategies

Terminology Target molecule (TM). Disconnection approach Retrosynthesis, Synthon synthetic equivalent (SE), Functional group interconversion (FGl), Linear, Convergent synthesis. Retrosynthetic analysis nf th following molecules l) acetophenoue 2) cyclohexene and 3) phenylethybromide

SH-G-3: Asymmetric synthesis

Definition and classification of stereoslective reactions: substrate, pruduct stereoselctive reactions, enantio and diastereo selective reactions. Stereospecific reactlion definition example dehalogenation of 1.2 dibromides induced by iodide ion.Enantoselective reactions definition example -Reduction of Ethylacctoacetate by Yeast. Diastereoselective reaction-defention- on-example: Acid catalysed dehydration l phenylproponal and Grignard addtiion to 2 phenyl propanal. Def and explanation of enantiomeric excess and diastereomeric excess

PAPER–III

UNIT–I(InorganicChemistry–III)

1. CoordinationChemistry:

IUPAC nomenclature, bonding theories – review of Werner's theory andSidgwick'sconceptof coordination,Valencebondtheory,geometriesof coordinationnumbers,4-tetrahedralandsquareplanar and6-octahedralandits limitations,crystal fieldtheory,splittingof d-orbitalsinoctahedral, tetrahedralandsquareplanar complexes – low spin and high spin complexes – factors affecting crystal field splittingenergy,merits anddemerits ofcrystalfieldtheory.Isomerismincoordination compounds – structural isomerismand stereo isomerism, stereochemistry of complexes with4and6coordinationnumbers.

2.Spectralandmagneticproperties

ofmetalcomplexes:Electronabsorptionspectrumof$[Ti(H_2O)_6]^{3+}$ion.Typesofmagnetic behaviour,spin- only formula, calculation of magnetic moments, experimental determination ofmagneticsusceptibility – Gouymethod.

3. Reactivityofmetalcomplexes:

Labile and inert complexes, ligand substitution reactions – S_N1 and S_N2 substitutionreactionsofsquareplanarcomplexes–Transeffectandapplicationsof

4. Stabilityofmetal complexes :

Thermodynamic stability and kinetic stability, factors affecting the stability of metal complexes, chelate effect, determination of composition ofcomplex byJob'smethodandmole ratiomethod.

5. Hardandsoftacids bases (HSAB):Classification, Pearson'sconcept ofhardness and softness, applicationofHSABprinciples – Stability of compounds / complexes, predicting the feasibility of a reaction.

6. Bioinorganicchemistry:

Essentialelements,biologicalsignificanceofNa,K,Mg,Ca,Feandchloride(Cl^-).Metalloporphyrins–

haemoglobin,structureandfunction,Chlorophyll,structureandroleinphotosynthesis.

UNIT–II(OrganicChemistry–III)

NitrogenCompounds:(9h)

Nitrohydrocarbons:Nomenclature andclassification–nitrohydrocarbons–structure. Tautomerismofnitroalkanesleadingtoacidandketoform.PreparationofNitroalkanes.Reactivity–halogenation,reactionwithHONO(Nitrousacid),NefreactionandMannich reactionleadingtoMichaeladditionandreduction.Amines(AliphaticandAromatic):Nomenclature, Classificationinto$1^0,2^0,3^0$Aminesand Quaternary ammoniumcompounds.Preparativemethods– (1).Ammonolysisofalkyl halides (2).Gabrielsynthesis(3).Hoffman'sbromamide reductionreaction(mechanism). (4).ReductionofAmidesandSchmidtreaction.Physical propertiesandbasiccharacter– Comparativebasicstrengthof Ammonia,methylamine,dimethylamine,trimethylamine andaniline- Comparative basicstrengthof aniline,*N*-methylanilineand*N,N*-dimethyl aniline(in aqueousandnon-aqueousmedium),stericeffectsandsubstituenteffects.Use ofaminesalts as phasetransfercatalysts.Chemicalproperties :a)Alkylation b)Acylation

c)Carbylaminereactiond)Hinsbergseparatione)Reactionwith Nitrousacidof1^0,2^0,3^0 (Aliphaticandaromaticamines).Electrophilic substitutionsof Aromaticamines– Bromination andNitration.Oxidation of aryland3^0amines.Diazotization.Cyanidesand isocyanides:Nomenclature(aliphaticandaromatic)structure.Preparationof cyanides:a) fromAlkylhalides b) fromamides c)fromaldoximes. Preparationofisocyanidesfromalkylhalidesandamines.Propertiesofcyanidesand isocyanides,a)hydrolysisb)additionofGrignardreagentc)reductiond)oxidation.

2.HeterocyclicCompounds:(5h)

Introductionanddefinition:Simple5memberedringcompoundswithoneheteroatomEx .Furan,ThiopheneandPyrrole.Importanceofringsystem–presenceinimportantnatural procductslikehaemoglobinandchlorophyll.Numberingtheringsystemsasper GreekletterandNumbers.Aromatic character–6-electronsystem (four-electronsfrom twodoublebondsandapairofnon-bondedelectronsfromtheheteroatom).Tendencyto undergosubstitution reactions.Resonancestructure:Indicatingelectron surpluscarbons andelectrondeficient heteroatom.Explanationoffeeblyacidiccharacterofpyrrole, electrophilicsubstitutionat 2or 5 position, halogenation, nitrationand sulphonation undermildconditions.Reactivity offuranas1,3-diene,DielsAlderreactions(one example).Sulphonationofthiophene, purificationofBenzene(obtainedfromcoal tar). Preparation offuran,Pyrroleandthiophenefrom 1,4-dicarbonylcompoundsonly.Paul- Knorrsynthesis,structureofpyridine,Basicity– Aromaticity–Comparisionwith pyrrole–onemethodof preparationand properties–ReactivitytowardsNucleophilic substitutionreaction – Chichibabinreaction.

3. Carbohydrates:

Monosaccharides:Alldiscussiontobeconfinedto(±)glucoseasanexampleof aldo hexosesandD(-)fructoseas exampleofketohexoses.Chemicalproperties andstructuralelucidation:Evidencesforstraightchainpentahydroxy aldehydestructure(Acetyaltion, reaductionto n-hexane, cyanohydrinformation, reductionofTollen'sand Fehling reagentsand oxidationto gluconic and saccharicacid). Number ofopticallyactive isomerspossibleforthestructure,configurationof glucosebasedonD-glyceraldehyde as primary standard (no proof for configuration is required). Evidence forCyclic

structureof glucose–Decompositionof cyclicstructure(Pyranosestructure,anomeric carbon andanomers).Proofforthering size(methylation,hydrolysisand oxidation reactions).Differentwaysof writingpyranosestructure(Haworthformulaandchair conformationformula).Structureoffructose:Evidenceof 2-ketohexosestructure (formationofpentaacetate,formationofcyanohydrineitshydrolysisandreductionby HItogive2-Carboxy-n-hexane).Sameosazoneformationfrom glucose andfructose, Hydrogenbondinginosazones,cyclicstructure forfructose (Furanose structure and Haworthformula).InterconversionofMonosaccharides:Aldopentosetoaldohexose– eg:ArabinosetoD-glucose,D-mannose(Kilinai–Fischermethod).Epimers,Epimerisastion–Lobry de bruynvan Ekenstein rearrangement.AldohexosetoAldopentoseeg:D-glucosetoD-arabinosebyRuff'sdegradation.Aldohexose (+)(glucose)toketohexose (-)(fructose) andKetohexose(Fructose)toaldohexose(Glucose).

4. Aminoacids andproteins:Introduction:DefinitionofAminoacids, classificationofAminoacidsintoalpha,beta, andgamaaminoacids.Naturalandessentialaminoacids–definitionandexamples, classificationofalphaamino acidsinto acidic, basic and neutralamino acidswith examples.Methodsofsynthesis:Generalmethodsofsynthesisofalphaaminoacids (specificexamples–Glysine,Alanine,ValineandLeucine)byfollowingmethods:a) fromhalogenatedcarboxylicacidb)Malonicestersynthesis c)Strecker's synthesis. Physical properties : Optical activity of naturally occurring amino acids: L-configurationirrespectiveofsignrotation,Zwitterionstructure–saltlikecharacter– solubility,meltingpoints,amphotericcharacter,definitionofisoelectricpoint.Chemical properties:Generalreactionsduetoaminoandcarboxylgroups–lactams from gammaanddeltaaminoacidsbyheatingpeptidebond(amidelinkage).Structure andnomenclatureofpeptides andproteins.

5. Mass Spectrometry:(5h)

Basicprinciples–Molecularion/parention,fragmentions/daughterions.Theory– formationofparentions.Representationofmassspectrum.Identificationofparention, (M+1),(M+2),basepeaks(relativeabundance100%)–Massspectraof ethylbenzene, acetophenone,n-butylamineand 1-proponol.

UNIT-III(PhysicalChemistry-III) 30hrs (1 h/w)

1. ChemicalKinetics:(9h)

Rateof reaction,factorsinfluencingtherateofareaction–Concentration, temperature,pressure,solvent,light,catalyst.Experimental methodstodeterminethe rateof reaction.Definitionof orderandmolecularity.Derivationofrateconstantsfor

first,secondandzeroorderreactionsand examples.Derivationfor timehalf change. Methods todeterminetheorderofreactions.Effectoftemperatureonrateofreaction, Arrhenius equation, concept of activation energy. Theories ofreaction rates – collisiontheory–derivationof rateconstantforbimolecularreaction.Thetransition statetheory(elementarytreatment).

2. Photochemistry:(5h)

Differencebetweenthermalandphotochemicalprocesses.Lawsof photochemistry– Grothus-Draper'slawandStark-Einstein'slawof photochemicalequivalence.Quantumyield.Photochemicalhydrogen-chlorine,hydrogen-bromine reaction.Jablsonskidiagram-depictingvarious processes occurringintheexcited state,qualitativedescription of fluorescence, phosphorescence, non-radiative processes(internalconversion,intersystem crossing).Photosensitizedreactions– energytransferprocesses (simpleexample).

3. Thermodynamics:(16 h)

Thefirstlawof thermodynamics-statement,definitionofinternalenergyand enthalpy.Heatcapacitiesand theirrelationship.Joule– Thomson effectandJoule-Thomsoncoefficient.Calculationofw,q,dEanddHfortheexpansionofperfectgas under isothermand adiabatic conditions for reversible processes. State function. Temperature dependenceofenthalpyofformation-Kirchoff's equation.Secondlawofthermodynamics.Differentstatementsofthelaw–CarnotCycle anditsefficiency.Carnottheorem.Thermodynamicscaleof temperature–Conceptof entropy,entropyasastatefunction,entropy changesincyclic,reversibleand irreversibleprocessesandreversiblephasechange.Calculationofentropy changes withchangesinV&TandP&T.Entropy changesinspontaneousandequilibrium processes.

TheGibb's(G)andHelmholtz(A)energies-A& Gascriteriaforthermodynamic equilibriumandspontaneity–advantageoverentropychange.Gibbsequationand thevariationofGwithP&T.

Paper-IV Chemistryandindustry

UNIT–I(Physicochemicalmethodsofanalysis)

1. Separationtechniques:(12h)

1. Chromatography :Classification of chromatography methods, principles of differentialmigrationadsorptionphenomenon,Natureof adsorbents,solventsystems,$R_f$values,factors effecting$R_f$values.

a) Paper Chromatography : Principles, $R_f$values, experimental procedures, choice of paper and solvent systems, developments of chromatogram –ascending, descending and radial. Two dimensional chromatography,applications.

b) Thin layerChromatography (TLC) : Advantages, principles, factors effectingR_f values.Experimental procedures.Adsorbentsandsolvents.Preparationof plates.Developmentof thechromatogram.Detectionof the spots.Applications.

c) Column Chromatography : Principles, experimental procedures, stationaryandmobilephases,separationtechnique.Applications.

2. Spectrophotometry:(4h)

Generalfeatures ofabsorption–spectroscopy,Beer-Lambert'slawanditslimitations, transmittance,Absorbanceandmolarabsorptivity.Doublebeam spectrophotometer.ApplicationofBeer-Lambert'slawforquantitativeanalysis of

1) Chromiumin$K_2Cr_2O_7$
2) Manganesein$KMnO_4$
3) Iron(III)withthiocyanate

3. MolecularSpectroscopy:

i)Electronicspectroscopy:

Interactionofelectromagneticradiationwithmoleculesandtypesof molecular spectra.Potentialenrgycurves forbonding and antibonding molecular orbitals. Energy levelsofmolecules(,,n).Selectionrulesforelectronicspectra. Typesof electronictransitionsinmolecules,effectof conjugation.Conceptofchromophore.

ii)InfraredSpectroscopy:Energy levels of simple harmonic oscillator, molecular vibration spectrum, selection rules.Determination offorceconstant.Qualitativerelation offorce constanttobondenergies.ModesofvibrationinCO,CO_2 andH_2Omolecules. Characteristicabsorptionbandsofvariousfunctionalgroups.Fingerprintnature of infraredspectrum.

iii)Protonmagneticresonancespectroscopy(^{1}H-MR):

Principles of nuclear magnetic resonance, equivalent and non-equivalentprotons,positionofsignals.Chemicalshift,NMRsplittingof signals–spin-spin coupling,couplingconstants.Applications ofNMRwithsuitable examples-

ethylbromide,ethanol,acetaldehyde,1,1,2-tribromoethane,ethylacetate,tolueneand acetophenone.

iv)Spectralinterpretation:InterpretationofIR,UV-Visible,^{1}H-NMRandmass spectraldataofthefollowing compounds1)Phenylacetylene2)Acetophenone3)Cinnamicacid4)Paranitro

UNIT–II (Drugs,Formulations,pesticides andgreenchemistry)

1.Drugs:(20h)

1.Introduction:Drug, disease (definition), Historicalevolution,Sources–plant, Animalsynthetic,Biotechnologyandhumangenetherapy.

2.Terminology:Pharmacy,Pharmacology,Pharmacophore,Pharmacodynamics, Pharmacokinetics (ADME,Receptors–brieftreatment)Metabolites andAntiMetabolites.

3.Nomenclature:Chemicalname,Genericnameandtradenames withexamples

4. Classification:Classificationbasedonstructuresandtherapeuticactivitywithone exampleeach.

5. Synthesis : Synthesis and therapeutic activity of the following drugs, L-Dopa, Chloroquin, Omeprazole,Albuterolandciprofloxacin.

6. Drug development: Penicillin, Seperation and isolation,structureofthe different penicillines.

7. Monographs ofdrugs:Eg:Paracetamol,Sulphamethoxazole (Tablets).

2.Formulations:(3h)

1.Needofconversionofdrugsintomedicine.Additives andtheirrole(brief accountonly)

2.Differenttypes offormulations.

3.GreenChemistry:(7h)

Introduction:Definitionofgreenchemistry,needofgreenchemistry,basic principles ofgreenchemistry.Greensynthesis:Evaluationofthetypeofthereactioni)Rearrangemen ts(100%atomeconomic), ii) Additionreaction(100% atomeconomic), Pericyclicreactions(no by- product).Selectionofsolvent:i) Aqueous phase reactionsii)Reactionsinionicliquidsiii)Solidsupportedsynthesisiv) Solventfree reactions (solidphase reactions) MicrowaveandUltrasoundassistedgreensynthesis:

1. Aldolcondensation
2. Cannizzaroreaction
3. Diels-Alderreaction
4. Streckersynthesis

5. Williamsonsynthesis
6. Dieckmanncondensation

UNIT-III (Polymers,material Scienceandcatalysis)

1. Polymers:(14h)

Classificationofpolymers,chemistryofpolymerisation,chainpolymerisation,steppolymerisation,coordination polymerisation– tacticity (isotactic,syndiotacticand atacticpolypropylene).Molecularweightof polymers.Numberaverageandweight averagemolecularweights,degreeof polymerisation,determinationofmolecular weightof polymersbyViscometry,Osmometry:Mechanismoffreeradical polymerization–Preaparationandindustrialapplicationof polyethylene,PVC, Teflon,Polyacrylonitrile,TeryleneandNylon-66.

2.Material Science:Properties andapplications ofnano-materials.

3.Catalysis:Homogeneousandheterogenouscatalysis,comparisionwithexamples.Kineticsofspecificacidcatalysedreactions,inversionof canesugar.Kineticsofspecificbase catalysedreactions,basecatalysedconversion ofacetonetodiacetone alcohol.Acid andbasecatalysedreactions–hydrolysis ofesters, mutarotationofglucose.Enzymecatalysis:Classification,characteristicsofenzymecatalysis. Kineticsofenzyme catalysedreactions-Michaelis Menten law, significance of Michaelis constant(Km)andmaximumvelocity (*V*max).Factorsaffectingenzyme catalysis- effectof temperature,*p*H,concentrationandinhibitor.Catalyticefficiency.Mechanismofoxidationofethanolbyalcoholdehydrogenase.

Unit-II (Organic Chemistry) 11 Hrs

S5-O-1: Amines, Cyanides and Isocyanides 07 Hrs

Amines:

Nomenclature, classification into 1^0, 2^0, 3^0 Amines and Quaternary ammonium compounds.

Preparative methods – 1.Ammonolysis of alkyl halides 2.Gabriel synthesis 3.Hoffman'sbromide reaction (mechanism).Reduction of Amides and Schmidt reaction. Physical propertiesand basic character – Comparative basic strength of Ammonia, methyl amine, dimethyl amine,tri methyl amine and aniline-comparative basic strength of aniline, N- methyl aniline and N,Ndimethyl aniline (in aqueous and non- aqueous medium), steric effects and substituent effects.Use of amine salts as phase transfer catalysts. 4. Chemical Properties: a) Alkylation b) Acylationc) Carbylamine reaction d) Hinsberg's separation. 5. Reaction with Nitrous acid of 1^0, 2^0, 3^0(Aliphatic and aromatic amines). Electophilic substitutions of Aromatic amines – Bromination and Nitration, oxidation of aryl and 30 Amines, diazotisation. 6. Diazonium salts: Preparationwith mechanism. Synthetic importance – a) Replacement of diazonium group by – OH, X (Cl)-Sandmeyer and Gatterman reaction, by fluorine (Schiemann's reaction), by iodine, CN, NO_2, Hand aryl groups. Coupling Reaction of diazonium salts. i) with phenols ii) with anilines.Reduction to phenyl hydrazines

Cyanides and isocyanides:

Nomenclature (aliphatic and aromatic) structure.Preparation of cyanides from a) Alkyl halidesb) from amides c) from aldoximes.Preparation of isocyanides from Alkyl halides and Amines. 2.Properties of cyanides and isocyanides, a)hydrolysis b) addition of Grignard reagent iii)reduction iv) oxidation.

S5-O-2: Heterocyclic Compounds 04 Hrs

Introduction and definition: Simple 5 membered ring compounds with one hetero atom Ex.Furan. Thiophene and pyrrole.Importance of ring systems – presence in important naturalproducts like hemoglobin and chlorophyll.Numbering the ring systems as per Greek letter andNumbers.Aromatic character – 6- electron system (four-electrons from two double bonds and apair of non-bonded electrons from the hetero atom).Tendency to undergo substitution reactions.Resonance structures: Indicating electron surplus carbons and electron deficient hetero atom.

Explanation of feebly acidic character of pyrrole, electrophillic substitution at 2 or 5 position,Halogenation, Nitration and Sulphonation under mild conditions. Reactivity of furan as 1,3-diene, Diels Alder reactions (one example). Sulphonation of thiophene purification of Benzeneobtained from coal tar). Preparation of furan, Pyrrole and thiophene from 1,4,- dicarbonyl

compounds only, Paul-Knorr synthesis, structure of pyridine, Basicity – Aromaticity –Comparison with pyrrole – one method of preparation and properties – Reactivity towardsNucleophilic substitution reaction – Pchichibabin reaction.

Unit-III (Physical Chemistry)

S5-P-1: Chemical Kinetics 11 Hrs

Introduction to chemical kinetics, rate of reaction, variation of concentration with time, rate lawsand rate constant.Specific reaction rate. Factors influencing reaction rates: effect ofconcentration of reactants, effect of temperature, effect of pressure, effect of reaction medium,effect of radiation, effect of catalyst with simple examples, order of reaction.First order reaction, derivation of equation for rate constant. Characteristics of first orderreaction.Units for rate constant.Half- life period, graph of 1st order reaction, examples.Decomposition of H_2O_2 and decomposition of oxalic acid.Pseudo first order reaction, Hydrolysis of methyl acetate, inversion of cane sugar, problemsSecond order reaction, derivation of expression for 2nd order rate constant, examples-Saponification of ester, $2O_3$ ---→ $3O_2$, $C_2H_4 + H_2$ ------.> C_2H_6. Characteristics of second orderreaction, units for rate constants, half- life period and second order plots.Zero order reaction: derivation of rate expression, examples i)combination of H_2 and Cl_2 to form HCl, ii) thermal decomposition of HI on gold surface characteristics of Zero order reaction unitsof k, half-life period and graph, problems.Determination of order of reaction: i) method of integration, ii) half life method, iii) vant-Hoff differential method iv) Ostwald's isolation method. Problems.Kinetics of complex reactions (first order only): Opposing reactions, Parallel reactions,Consecutive reactions and Chain reactions. Problems.Effect of temperature on reaction rate, Arrhenius equation.Temperature coefficient. Concept ofenergy of activation, determination of energy of activation from Arrhenius equation and by graphical method, problems. Simple collision theory based on hard sphere model explanation offrequency factor, orientation or steric factor.The transition state theory (elementary treatment).

Unit-IV (General Chemistry) 12 Hrs

S5-G-1: Molecular spectroscopy 08 Hrs

Introduction to electromagnetic radiation, interaction of electromagnetic rations with molecules,various types of molecular spectra.

Rotational spectroscopy (Microwave spectroscopy)

Rotational axis, moment of inertia, classification of molecules (based on moment of inertia),rotational energies, selection rules, determination of bond length of rigid diatomic molecules eg.HCl.

Infra red spectroscopy

Energy levels of simple harmonic oscillator, molecular vibration spectrum, selection rules.Determination of force constant.Qualitative relation of force constant to bond energies.Anharmonic motion of real molecules and energy levels.Modes of vibrations in polyatomicmolecules.Characteristic absorption bands of various functional groups. Finger print nature ofinfrared spectrum

Electronic spectroscopy:

Bonding and antibonding molecular orbitals, electronic energy levels of molecules (σ, π, n),types of electronic transitions: σ-σ^*, n-σ^*, n-π^*, π-π^* with suitable examples. Selection rules,Terminology of chromophore, auxochrome, bathochromic and hypsochromic shifts. Absorptionof characteristics of chromophones: diene, enone and aromatic chromophores. Representation of UV-Visible spectra.

S5-G-2: Photochemistry 04 Hrs

Introduction to photochemical reactions, Difference between thermal and photochemicalreactions, Laws of photo chemistry- Grotthus - Drapper law, Stark – Einsteins Law of photochemical equivalence. Quantum yield.Examples of photo chemical reactions with differentquantum yields. Photo chemical combinations of H_2 – Cl_2 and H_2 – Br_2 reactions, reasons for thehigh and low quantum yield. Problems based on quantum efficiency, Consequences of light absorptions. Singlet and triplet states. Jablonski diagram Explanation of internal conversion,inter- system crossing, Phosphorescence, fluorescence.

U.G. CHEMISTRY (Under CBCS)
B.Sc. Final Year (DSC-1E)
SEMESTER – V
LABORATORY COURSE
CHEMISTRY-V (Organic Synthesis and TLC)
(03 Hrs per week, 01 Credit) 45 Hrs

I. Synthesis of Organic compounds:

Acetylation: Acetylation of salicylic acid, Benzoylation of Aniline.

Aromatic electrophilic substitution: Nitration: Preparation of nitro benzene and m-dinitrobenzene.

Halogenation: Preparation of p-bromo acetanilide, Preparation of 2, 4, 6-tribromo phenolOxidation: Preparation of benzoic acid from benzyl chloride.

Esterification: Preparation of n-butyl acetate from acetic acid.

Methylation: Preparation of β- naphthyl methyl ether.

Condensation: Preparation of benzilidine aniline and Benzaldehyde and aniline.

Diazotisation: Azocoupling of β-Naphthol.

II. Thin layer Chromatography (TLC)

Determination of R_f values and identification of organic compounds: preparation and separationof 2,4-dinitrophenyl hydrazones of acetone and 2-butanone using toluene and lightpetroleum(40:60)Separation of ortho & para nitro aniline mixtures.

SATAVAHANA UNIVERSITY
U.G. CHEMISTRY (Under CBCS)
B.Sc. Final Year (DSE-1E)
SEMESTER – V
ELECTIVE-I
A (T) - INSTRUMENTAL METHODS OF ANALYSIS

Unit I: Chromatography-I 11Hrs

S5-E-A-I: Solvent Extraction- Principle, Methods of extraction: Batch extraction, continuousextraction and counter current extraction. Application – Determination of Iron (III).

Chromatography: Classification of chromatographic methods, principles of differentialmigration, adsorption phenomenon, nature of adsorbents, solvent systems.

Thin layer Chromatography (TLC): Advantages, preparation of plates, development of thechromatogram, Detection of the spots, factors effecting Rf values and applications.

Paper Chromatography: Principle, choice of paper and solvent systems, development ofchromatogram – ascending, descending, radial and two dimensional chromatography andapplications

Unit II: Chromatography-II 11Hrs

S5-E-A-II: Column Chromatography- Principle, Types of stationary phases, Column packing– Wet packing technique, Dry packing technique. Selection criteria of mobile phase solvents foreluting polar, non-polar compounds and its applications.

Ion exchange chromatography: Principle, cation and anion exchange resins, its application inseparation of ions.

Gas Chromatography: Theory and instrumentation (Block Diagram), Types of stationaryphases and carrier gases (mobile phase).

High performance liquid chromatography: Theory and instrumentation, stationary phases andmobile phases. Analysis of paracetamol.

Unit III: Colorimetry and Spectrophotometry 12Hrs

S5-E-A-III: General features of absorption – spectroscopy, transmittance, absorbance, and molarabsorptivity. Beer Lambert's law and its limitations, difference between Colorimetry andSpectrophotometry.

Instruments – Single beam UV- Visible Spectrophotometer, Double beam UV-VisibleSpectrophotometer. Lamps used as energy sources. Verification of Beer's law. Estimation of ironin water samples by thiocyanate method. Estimation of (i) Chromium and (ii) Manganese insteel.

IR Spectrophotometer: Principle, Sources of Radiations, Sampling, Block diagram of FT-IRSpectrophotometer.

Unit IV: Electro analytical methods 11Hrs

S5-E-A-IV: Types of Electro analytical Methods.

I) Interfacial methods – a) Potentiometry: Principle, Electrochemical cell, Electrodes- (i)Indicator and (ii) Reference electrodes **–** Normal Hydrogen Electrode, Quinhydrone Electrode,Saturated Calomel Electrode. Numerical Problems. Application of Potentiometry **–** Assay ofSulphanilamide

b) Voltametry **–** three electrode assembly; Introduction to types of voltametric techniques, microelectrodes, Over potential and Polarization

II) Bulk methods – Conductometry, Conductivity Cell, Specific Conductivity, EquivalentConductivity. Numerical Problems.Applications of conductometry.Estimation of Cl-using $AgNO_3$.Determination of Aspirin with KOH.

SEMESTER – V
ELECTIVE-I
A (T) - INSTRUMENTAL METHODS OF ANALYSIS
LABORATORY COURSE
(Chemical Kinetics& Electrochemistry)
(02 Hrs per week, 01 Credit) 30 Hrs

I. Chemical Kinetics

1. Kinetic study of Acid Catalyzed hydrolysis of methyl acetate and determination of rateconstant - Graphical method.
2. Kinetic study of Acid catalyzed Acetone - Iodine reaction and determination of rate constant –Graphical method.
3. Kinetic study of persulphate iodide reaction and determination rate constant Graphical method

II. Electrochemistry (Potentiometry & pH metry)

1. Determination of Redox potentials of Fe^{2+} by Potentiometry titration of ferrous ammoniumsulphate Vs. $KMnO_4$.
2. pH metric titration of strong acid (HCl) with strong base (NaOH)
3. pH metric titration of weak acid (Acetic acid) with strong base (NaOH) and determination ofdissociation constant

SEMESTER – V
ELECTIVE-I
B) INDUSTRIAL CHEMISTRY AND CATALYSIS
(03 Hrs per week, 03 Credits) 45 Hrs

Unit I: General Principles of Metallurgy and Production of Non Ferrous Metals 11 Hrs

S5-E-B-I: Pyrometallurgy: Drying and calcination, roasting, smelting, products of smelting,

Hydrometallurgy: Leaching methods, leaching agents, leaching of metals, oxides and sulphides.

Separation of liquid and solid phases and processing of aqueous solutions

Electrometallurgy: Electrolysis, Refining electrolysis, electrolysis from aqueous solutions,fused-salt electrolysis

Refining processes: Chemical and physical refining processes

Production of selected non-ferrous metals (Copper, Nickel, Zinc): Properties, raw materials,production (flow charts presentations and chemical reactions involved) and uses.

Unit II: Natural and Synthetic Dyes 12 Hrs

S5-E-B-II: Classification of dyes. Sources of natural dyes: Indigoid, Anthraquinone,Naphthoquinone, Benzoquinone, Flavonoid, Carotenoid and Tannin-based dyes.

Synthetic Dyes: Acidic, basic, dispersive, direct, reactive and vat dyes with examples.Extraction of natural dyes and their sustainability: The different methods for extraction ofcoloring materials from natural dyes. Aqueous extraction, alkali or acid extraction, microwaveand ultrasonic assisted extraction, fermentation, solvent extraction, super critical fluid extraction.

Drying methods. Application of natural dyes on textiles, Mordanting- types of mordanting -metallic mordants, oil mordants, Tannins and Tannic acid. Present scenario and sustainabilityIssues in usage of natural dyes and cost considerations.

Unit III: Catalysis-I 11 Hrs

S5-E-B-III: Homogeneous and heterogeneous catalysis - Definition of a catalyst andcatalysis.Comparison of homogeneous and heterogeneous catalysis with specific examples.Generalcharacteristics of catalytic reactions.

Acid-base catalysis- Examples of acid and base catalysed reactions, hydrolysis of esters.Kinetics of acid catalysed reactions. Specific acid and general acid catalysis, Kinetics of basecatalysed reactions. Specific base and general base catalysis.Examples-Aldol condensation anddecomposition of nitramide, base catalysed conversion of acetone to di acetone alcohol. Effect of

P_H on reaction rate of acid and base catalysed reactions.

Phase transfer catalysis: Principle of phase transfer catalysis, classification of phase transfercatalysts. Factors influencing the rate of PTC reactions.

Unit IV: Catalysis-II 11 Hrs

S5-E-B-IV: Enzyme catalysis- Characteristics of enzyme catalysis, Examples: (i) Invertase ininversion of cane sugar (ii) Maltase in conversion of maltose to glucose (iii) Urease indecomposition of urea and (iv) Zymase in conversion of glucose to ethanol. Factors affectingenzyme catalysis. Effect of temperature, pH, concentration and inhibitor on enzyme catalyzed reactions.

Kinetics of enzyme catalysed reactions: Michaelis-Menton Equation. Mechanism of enzymecatalysed reactions. Significance of Michaelis constant (K_m) and maximum velocity (V_{max}),Lineweaver-Burk plot.

CHEMISTRY LAB PAPER -VI (Elective-B)
(Spectral Analysis & Separation of Organic Compounds)
(02 Hrs per week, 01 Credit) 30 Hrs

I. Spectral analysis of Organic compounds

Analysis of any five organic compounds with different functional group using UV, IR, ^{1}HNMR and Mass Spectroscopy.

II. Separation of two component mixture

1. Aniline + Naphthalene
2. Benzoic acid + Benzophenone

CHEMISTRY PAPER-VI (Elective-C)
DSE: Analysis of Drugs, Foods & Dairy Products
(03 Hrs per week, 03 Credits) 45 Hrs

UNIT- I 11 Hrs

S5-E-C-1: Analysis of the drugs and pharmaceuticals preparations-I

(Knowledge of molecular formula, structure and analysis)

1. Analysis of analgesics and antipyretics like aspirin and paracetamol
2. Analysis of antimalerials like choloroquine.
3. Analysis of drugs in the treatment of infections and infestations: Amoxicillin, chloramphenicol,metronidazole, penicillin, tetracycline, cephalexin (cephalexin). Anti-tuberculosis drugisoniazid**.**

UNIT - II 11 Hrs

S5-E-C-2: Analysis of the drugs and pharmaceuticals preparations-II

(Knowledge of molecular formula, structure and analysis)

1. Analysis of antihistamine drugs and sedatives like: Allegra, zyrtec (citirizine), alprazolam,trazodone, lorazepem, ambient (zolpidem), diazepam.
2. Analysis of prevacid (lansoprazole) a drug used for the prevention of production of acids instomach.

UNIT - III 11 Hrs

S5-E-C-3: Analysis of the drugs and pharmaceuticals preparations-III

1. Analysis of anti epileptic and anti convulsant drugs like Phenobarbital and phenacemide.
2. Analysis of drugs used in case of cardiovascular drugs: atenolol, norvasc (amlodipine).
3. Analysis of Lipitor (atorvastatin) a drug for the prevention of production of cholesterol.
4. Analysis of diuretics like: furosemide (Lasix), triamterene

UNIT - IV

S6-E-C-4: Analysis of Milk, Milk products & Food materials 12 Hrs

Acidity, total solids, fat, total nitrogen, protenines, lactose, phosphate activity, casein, chloride.

Analysis of food materials- Preservatives: Sodium carbonate, sodium benzoate sorbic acid

Coloring matters, - Briliant blue FCF, fast green FCF, tertrazine, erytrhosine, sunset yellow FCF.

Flavoring agents - Vanilla, diacetyl, isoamyl acetate, limonene, ethyl propionate, allyl hexanoate

and Adulterants in rice and wheat, wheat floo0r, sago, coconut oil, coffee powder, tea powder,

LABORATORY COURSE

DSE: CHEMISTRY LAB PAPER -VI (Elective-C)

((Industrial Chemicals & Environment))

(02 Hrs per week, 01 Credit) 30 Hrs

1. Determination of dissolved oxygen in water.
2. Determination of Chemical Oxygen Demand (COD)
3. Percentage of available chlorine in bleaching powder.
5. Measurement of chloride of water samples by simple titration method by AgNO3
6. Estimation of total alkalinity of water samples (CO_3^{2-} & HCO_3^- using double titrationMethod.
7. Estimation of Copper in Brass

Department of Zoology

B.Sc I Year (CBCS)

I - SEMESTER

No.	Chapter Unit wise
1.	**Unit – 1** **1.1 Brief history of Invertebrates** Kingdom Anmilia Brief history of invertebrates
2	**1.2 Protozoa:** General Characters and classification. **Type study:** Elphidium Locomotion, Reproduction and Diseases
3	**1.3 Porifera**: General Characters and classification. **Type study**: Sycon; Canal system in sponges. & Spicules.
4	**Unit – II Cnidaria** **2.1 Cnidaria** : General characters and classification. **Type study** : Obelia; Polymorphism in hydrozoa Corals and coral reef formation.
5	**2.2 Platyhelminthes**: General characters and classification. **Type study**: Schistosoma
6	**2.3 Nemathelminthes**: General characters and classification. **Type study**: Dracunculus Parasitic Adaptations in Helminthes
7	**Unit – III** **3.1 Annelida**: General characters and classification. **Type study**: Leech; Evolutionary significance of Coelome and coelomoducts and Metamerism
8	**3.2 Arthropoda**: General characters and classification. **Type study**: Prawn; Insect metamorphosis Peripatus- Structure and affinities
9	**Unit – IV** **4.1 Mollusca**: General characters and classification. **Type study**: Pila; Pearl formation in Molluscs. Torsion and detorsion in gastropods

10	**4.2 Echinodermata:** General characters and classification. Water vascular system in star fish Echinoderm larvae and their significance
11	4.3 **Hemichordata** General character and classification Balanoglossos – Structure and affinities

B.Sc I Year (CBCS) II - SEMESTER
Ecology, Zoogeography and Animal Behavior

UNIT- I

1.1 Ecology –I

1. Ecosystem structure and functions.
2. Types of Ecosystems – Aquatic and Terrestrial.
3. Biogeochemical cycles – Nitrogen, Carbon, Phosphorus and Water.
4. Energy flow in ecosystem.
5. Food chain, food web and ecological pyramids.
6. Animal Associations- Mutualism, commensalism, parasitism, competition, predation.

UNIT- II

2.1 Ecology –II

1. Concept of species, population dynamics and Growth curves.
2. Community structure and dynamics and ecological succession.
3. Ecological Adaptations.
4. Environmental pollution – Sources, Effect and Control measures of Air, Water, Soil and Noise pollution,
5. Wildlige conservation- Natioanl parks and sanctuaries of India, Endangered species.
6. Biodiversity and hotspots of Biodiversity in India.

UNIT – III

3.1 Zoogeography

1. Zoogeographical regions – Palaearctic, Nearctic, Neotropical, Oriental, Australian and Ethiopian regions – their Climatic and faunal peculiarities
2. Wallace line, Discontinuous distribution3. Continental Drift

UNIT –IV

4.1 Animal Behaviour

1. Types of Behaviour- Innate and Acquired, Instinctive and Motivated behavior
2. Taxes, Reflexes, Tropisms
3. Physiology and phylogeny of learning, trial and error learning, Imprinting, habituation, classical conditioning, Insturmental conditioning
4. Social behavior, communication, pheromones
5. Biological rhythms, Biological clocks, Circadian rhythms. I

B.Sc. ZOOLOGY SYLLABUS UNDER CBCS

(With effect from 2016-2017)

IV - SEMESTER

Core Paper – IV

Cell and Molecular Biology, Genetics, Evolution

Max. Marks: 80

UNIT – I

1. Cell Biology

1.1. Ultra structure of animal cell

1.2. Structure and functions of plasma membrane and proteins.

1.3. Structure and functions of cell organelles –
Endoplasmic reticulum, Golgi body, Ribosomes, Lysosomes, centrosomes, Mitochondria and Nucleus

1.4. Chromosomes – Structure, types, giant chromosomes

1.5. Cell Division - Mitosis, Meiosis, Cell cycle and its regulation.

UNIT – II

2. Molecular Biology

2.1 DNA (Deoxyribo Nucleic Acid) – Structure and replication

2.2 RNA (Ribo Nucleic Acid) - Structure, types

2.3 Protein Synthesis – Transcription and Translation

2.4 Gene Expression – Genetic Code; operon concept

2.5 Molecular Biology Techniques- Polymerase Chain Reaction, Electrophoresis

UNIT – III

3. Genetics

3.1 Mendals laws of Inheritance and Non-Medelian Inheritance

3.2 Linkage and Crossing over

3.3.Sex determination and sex-linked inheritance

3.4 Chromosomal Mutations- Deletion, Duplication, Inversion, Translocation, Aneuploidy
and Polyploidy.

3.5. Inborn errors of metabolism.

UNIT – IV (15 Periods)

4. Evolution

4.1. Theories of evolution – Lamarckism and Neo-Lamarckism, Darwinism and Neo-
Darwinism, Modern synthetic theory.
4.2. Evidences of Evolution
4.3. Hardy Weinberg Law.
4.4. Role of forces of Evolution – mutation, gene flow, genetic drift, and natural selection.
4.4. Isolation – Pre-mating and post mating isolating mechanisms
4.5. Speciation: Methods of speciation - Allopatric and sympatric

ZOOLOGY PRACTICAL SYLLABUS FOR IV SEMESTER
ZOOLOGY Core Paper – IV
Cell Biology, Genetics and Evolution
Max. Marks: 25

I. CYTOLOGY

1. Preparation and Identification of stages of slides of Mitotic divisions with onion root tips

II.PROBLEMS:

2. problems on mendelian inheritance
3. hardy Weinberg law

III. SPOTTERS:

1. Peripatus
2. Coelocanth fish
3. Lepidosiren
4. Neoceratodus
5. Petromyzon
6. Sphenodon
7. Archaeopteryx
8. Mitosis-prophase
9. Mitosis-metaphase
10. Mitosis-anaphase
11. Mitosis-telophase
12. Meosis-leptotene
13. Meosis-zygotene
14. Meosis-pachetene
15. Meosis-diplotene

16. Meosis-diakinesis
17. Meosis-metaphase I
18. Meosis-anaphase I
19. Meosis- telophase I
20. Alcaptonurea
21. Phenyl ketonurea
22. Klinifelter syndrome
23. Down's syndrome
24. Cridue chat syndrome
25. Turners syndrome

U.G. ZOOLOGY (Under CBCS)
B.Sc. Final Year (DSC-1E)
SEMESTER V
Physiology and Biochemistry (Theory)

UNIT I

1.1 Digestion definition; extra and intracellular digestion; Digestion of Carbohydrates, Proteins, Lipids and Cellulose.

1.2 Absorption and Assimilation of digested food; Role of Gastrointestinal hormones in
digestion

1.3 Definition of Respiration and Respiratory mechanisms External, Internal and cellular, Respiratory Pigment, Transport of oxygen, Oxygen dissociation curves. s effect, Transport of CO 2 Chloride shift, Regulation of respiration nervous and chemical.

1.4 Types of circulation - Open and Closed circulation; Structure of Mammalian Heart, Types of hearts Neurogenic and Myogenic.

1.5. Blood Clotting mechanism

UNIT II

2.1 Classification of Animals on the basis of excretory products- Ammonotelic, Uricotelic,
Ureotelic

2.2 Structure and function of Nephron; Urine formation, Counter current mechanism.

2.3 Types of Muscles; Ultra structure of skeletal muscle fibre; Sliding Filament theory, muscle contraction mechanism and energetics.

2.4 Structure of Neuron- Nerve impulse - Resting potential and Action potential and

Conduction of Nerve impulse
2.5 Synapse, types of synapses and Synaptic transmission.

UNIT III

3.1 Endocrine glands - Structure, secretions and functions of Pituitary, Thyroid, Parathyroid, Adrenal glands and Pancreas
3.2 Hormone action and concept of Secondary messengers, Male and Female Hormones, Hormonal control of Menstrual cycle in humans.
3.3 Concept and mechanism of Homeostasis.
3.4 Osmoregulation - Water and ionic regulation by freshwater, brackish water and marine animals
3.5 Enzymes: Definition, Classification, Inhibition and Regulation.

UNIT IV

4.1. Carbohydrates**:** Classification and function of Carbohydrates
4.2. Carbohydrate metabolism - Glycolysis, Krebs cycle, , Electron transport and oxidative
phosporelation.
4.3. Proteins**:** Classification of proteins based on functions and Chemical nature
4.4. Protein Metabolism - Transamination, Deamination and Urea Cycle
4.5. Lipids**:** Classifiation of Lipids, Lipid Metabolism - Fatty acid synthesis and Fatty acid oxidation.

U.G. ZOOLOGY (Under CBCS)
B.Sc. Final Year (DSC-1E)
SEMESTER V
Physiology and Biochemistry (Practical)
Max. Marks: 25

I.Major Experiment

1. Effect of pH and temperature on salivar amylase activity.
2.Estimation of unit oxyggen consumption of fish with reference to body weight.
3. Estimation of Heamoglobin by Sahlis method

II. Minor Experiment

Qualitative tests:

5. Identification of carbohydrates by Molish test. Write principle, procedue and result.
6. Identification of carbohydrates by Benedicts test. Write principle, procedue and result.
7. Identification of carbohydrates by Barfoed test. Write principle, procedue and result.
8. Identification of carbohydrates by Iodine test. Write principle, procedue and result.
9. Identification of carbohydrates by Special Sucrose test. Write principle, procedue and result.

10. Identification of Proteins by Biuret test. Write principle, procedue and result.
11. .Identification of Proteins by Millons test. Write principle, procedue and result.
12. .Identification of Proteins by Lead Acetate test. Write principle, procedue and result.
13. .Identification of Lipids by Solibility test. Write principle, procedue and result.
14. Identification of Lipids by Sudan-IV test. Write principle, procedue and result.
15. Identification of Lipids by Saffonication test. Write principle, procedue and result
16.. Qualitative tests for identification of ammonia
17. Qualitative tests for identification of Urea
18. Qualitative tests for identification of Uric Acid.

III**. Study of Histological sections of Mammalian Endocrine glands.**

A. Pituatary B. Thyroid C. Pancreas D. Adrenal gand.

U.G. ZOOLOGY (Under CBCS)
B.Sc. Final Year (DSE-1E)
SEMESTER V
B. Elective
C. A) Applied Zoology (Theory)

D. UNIT I

1.1.Types of Fisheries, culture of Fresh Water Fish and Prawn
E. 1.2. Fresh water fishing gears and crafts; Induced Breeding.
F. 1.3. Hatchery design and Management of fish and prawn, Transportation of fish and prawn
G. seed.
H. 1.4 Preservation, Processing and By-products of fishes.
I. 1.5 Fish Diseases and control measures

J. UNIT II

K. 2.1. Life cycle of *Bombyx mori*
L. 2.2 Structure of silk gland and secretion of silk
M. 2.3 Silkworm rearing technology, Spinning, harvesting and storage of cocoons.
N. 2.4 Silk worm Pests and Diseases: Uzi fly; Protozoan, Viral, Fungal and Bacterial; Control
O. and prevention.
P. 2.5 Prospects of Sericulture in India

Q. UNIT III

R. 3.1 Selection of Bee Species for Apiculture. Bee Keeping Equipment.
S. 3.2 Methods of Extraction of Honey (Indigenous and Modern).Bee Diseases and Enemies.
T. 3.3 Products of Apiculture Industry and its Uses (Honey, Bees Wax).

U. 3.4 Introduction of Vermiculture and Vermicomposting. Vermiculture techniques.
V. Bedding, Essential parameters for Vermiculture and Management
W. 3.5 Economic Importance of Vermiculture.

X. UNIT IV

Y. 4.1. Classification of Fowls based on their use Broilers and Commercial layers.
Z. 4.2. Principles of poultry breeding, Management of breeding stock and broilers.
AA. 4 .3 Processing and preservation of eggs.
BB. 4.4. Poultry diseases - Viral, Bacterial, Fungal, Protozoan
CC. 4.5. Management of a modern Poultry Farm, progressive plans to promote Poultry as a Self-Employment venture

U.G. ZOOLOGY (Under CBCS)
B.Sc. Final Year (DSE-1E)
SEMESTER V

Max. Marks: 25

DD. 1. DISSECTIONS.

EE. A. Mounting of mouth parts of adult silk worm

FF. B. Di ssect ion of Si lk gland.

GG. Or

HH. C. Identification of purity of Honey in different samples

II. 2. SPOTTERS.

JJ. A. Fresh water fishes

KK. (i) Catla catla

LL. (ii) Labeo rohita

MM. (iii) Clarius batracus

NN. (iv) Channa marulias

OO. (v) Anabus testudience

PP.B. Crustaceans

QQ. (i) Penaeus monodon

RR. (ii) Penaeus indicus

SS. (iii) Macrobrachium rosenbergii

TT. (iv) Macrobrachium malcamsoni

UU. (v) *Carciunus*

VV. C. Identification of mulberry and non mulberry silkworms and different larvae of silk worm

WW. (using specimens/pictures)

XX. (i) Bombyx mori (ii)Tussar silk worm (iii) Eeri silkworm

YY. (iv) Moonga silkworm (v) Silk worm- Egg (vi) Silk worm-Larvae

ZZ. (vii)Silk worm Pupa

AAA. . Field visits to a Vermiculture / Sericulture / fisheries / apiculture / poultry / dairy farm- submission of any 3 Reports

B.Sc (CBCS) Botany- I year
Semester-I - Paper-I
Microbial Diversity of Lower Plants
DSC - 1A (4 hrs./week)
Theory Syllabus
Credits- 4

(60 hours)

UNIT - I

1. Brief account of Archaebacteria, Actinomycetes.
(4h)
2. Cyanobacteria: General characters, cell structure, thallus organisation and their significance as biofertilizers with special reference to *Oscillatoria, Nostoc* and *Anabaena* (6h)
3.Lichens: Structure and reproduction; ecological and economic importance.

UNIT- II

4. Viruses: Structure, replication and transmission; plant diseases ca heir control with reference to Tobacco Mosaic and Rice Tungro. (7h)
5.. Bacteria**:** Structure, nutrition, reproduction and econ line of plant diseases of important crop plants caused by bacteria ith reference to Angular leaf spot of cotton and Bacterial blight o (8h)
6. General account of Mycoplasma with reference to L nd Papaya leaf curl

UNIT-III

7. General characters, structure, reprod cation of algae (Fritsch) and thallus organization in algae. (3h)
8. Structure and reproduction wing:
Chlorophyceae- *Volvo m* and *Chara.*(5h)
Phaeophyce (2h)
Rhodophyc *onia.*(3h)
ce of algae in Agriculture and Industry. (2h)
haracters and classification of fungi (Ainsworth). (3h)
and reproduction of the
following: (a)Mastigimycotina- *Albugo*
(b) Zygomycotina- *Mucor*
(c) Ascomycotina- *Saccharomyces* and *Penicillium.*
(d) Basidiomycotina- *Puccinia*
(e) Deuteromycotina- *Cercospora.* (10h)
12. Economic importance of fungi in relation to mycorrhizae and mushrooms. General accountof mushroom cultivation

B.Sc (CBCS) Botany-I year
Semester-I - Paper-I
Microbial Diversity of Lower Plants
Practical Syllabus
(45 hours)

1. Study of viruses and bacteria using electron micrographs (photographs). (3h)
2. Gram staining of Bacteria. (3h)
3. Study of symptoms of plant diseases caused by viruses, bacteria, Mycoplasma and fungi:
Viruses: Tobacco mosaic
Bacteria: Angular leaf spot of cotton and Rice tumgro.
Mycoplasma**:** Little leaf of Brinjal and Leaf curl of papaya h)
Fungi: White rust on Crucifers, Rust on wheat & Tikka disease (6h)
4. Vegetative and reproductive structures of the following taxa:
Algae: *Oscillatoria*, *Nostoc*, *Volvox*, *Oedogonium*,*C*
and*Polysiphonia.* (6 h)
Fungi: *Albugo*, *Mucor*,*Saccharomyces*, *Penicillium* d *Cercospora* (6h)
5. Section cutting of diseased material i i and identification of pathogens as per theory syllabus. White rust of Crucif & Tikka disease of Groundnut. (9h)
6. Lichens: Different types o external morphology (3 h).
7. Examination of impo al, fungal and algal products:
Biofertilizers antibiotics, mushrooms, Agar-agar etc. (3h)
8 Field visits algal / microbial / fungal interest (e.g. Mushroom cultivation, (3h)

B.Sc (CBCS) Botany- I year
Semester-II - Paper-II
Bryophytes, Pteridophytes, Gymnosperms and Paleobotany
DSC-1B (4 hrs./week) Theory Syllabus
Credits- 4
(60 hours)

UNIT-I

1. Bryophytes**:** General characters and classification. (3h)
2. Structure, reproduction, life cycle and systematic position of *Marchantia, Anthoceros* and*Polytrichum.* (Development stages are not required).
3. Evolution of Sporophyte in Bryophytes.

UNIT-II

4. Pteridophytes: General characters and classification (S (3h)
5. Structure, reproduction, life cycle and systematic po *copodium, Equisetum* and *Marsilea*. (10h)
6. Stelar evolution, heterospory and seed habi p y (2h)

UNIT-III

7. Gymnosperms: General cha ture, reproduction and classification (Sporne's). (4h)
8. Distribution and econo ce of Gymnosperms. (3h)
9. Morphology reproductive parts, systematic position and life cycle of (8 h)
10. Palaeobotany: Introduction, Fossils and fossilization ; Importance of fossils. (8 h)
11. Geological time scale; (4 h)
12. Bennettitales: General account. (3 h)

B.Sc (CBCS) Botany- I year
Semester-II - Paper-II
Bryophytes, Pteridophytes, Gymnosperms and Paleobotany
(45 hours)
Practical Syllabus

1.Study of Morphology (vegetative and reproductive structures) and anatomy of the following
Bryophytes: *Marchantia*, *Anthoceros* and *Polytrichum*. (9 h)
2. Study of Morphology (vegetative and reproductive structures) and anatomy of th f Pteridophytes: *Lycopodium*, *Equisetum* and *Marsilea*. ( )
3. Study of Anatomical features of *Lycopodium* stem, *Equisetum* ste etiole & rhizome by preparing double stained permanent mount (12h)
4. Study of Morphology (vegetative and reproductive s owing taxa:
Gymnosperms: *Pinus* and *Gnetum*. (6 h)
5. Study of Anatomical features of *Pi tum* stem by preparing double stained permanent mounts. (6h)
6. Fossil forms i lides / photographs: *Rhynia* and *Cycadeoidea.* (3h)

B.Sc (CBCS) BOTANY- II YEAR
Semester-III - Paper-III
Taxonomy of Angiosperms and Medicinal Botany
DSC-1C (4 hrs./week) Theory syllabus
Credits-4
(60 hours)

UNIT - I
1. Introduction: Principles of plant systematics, Types of classification: Artificial, Natural and
Phylogenetic; Systems of classification: Salient features and comparative account of Bentham
& Hooker and Engler & Prantle.An introduction to Angiosperm Phylogeny Group (APG). (7h)
2.. Current concepts in Angiosperm Taxonomy: Embryology in relation to taxonomy,
Cytotaxonomy, Chemotaxonomy and Numerical Taxonomy.
3.. Nomenclature and Taxonomic resources: An introduction to ICBN, Vienna cod account. Herbarium: Concept, techniques and applications. h)
UNIT-II
4.. Systematic study and economic importance of plan b l ing families:

Polypetalae : Annonaceae, Capparid ae, Fabaceae
(Faboideae/papilionoideae, Caesalpinioideae, Mimo eae
5. Gamopetalae: Apiaceae, Asteraceae, Asclepiadaceae
6. Monochalmydeae: Amaranthaceae, Euphor o ocoty edons: Orchidaceae and Poaceae. (15h)

UNIT - III

7.. Ethnomedicine: Scope, inte y nature, distinction of Ethnomedicine from Folklore medicine. (3h)
8. Outlines of A Unani and Homeopathic systems
of traditional ole of AYUSH, NMPB, CIMAP and CDRI. (5 h)
care: Common medicinal plants – Tippateega (*Tinospora*
(*Ocimum sanctum*), pippallu (*Piper longum*), Karakaya (*Terminalia*
nda (*Aloe vera*), Turmeric (*Curcuma longa*).
f crude drugs. (7h)

UNIT-IV

10. Traditional medicine vs Modern medicine: Study of selected plant examples used in
traditional medicine as resource (active principles, structure, usage and pharmacological action
of modern medicine: Aswagandha (*Withania somnifera*), Sarpagandha (*Rauwolfia serpentina*),
Nela usiri *(Phyllanthus amarus),* Amla (*Phyllanthus emblica*) and Brahmi (*Bacopa monnieri*).
(8h)
11.Pharmacognosy: Introduction and scope. Adulteration of plant crude drugs and methods
of identification - some examples. Indian Pharmacopoeia. (4h)
12. Plant crude drugs: Types, methods of collection, processing and storage practices. (3h)

B.Sc (CBCS) BOTANY- II YEAR
Semester-III - Paper-III
Taxonomy of Angiosperms and Medicinal Botany
Practical syllabus
(45 hours)

1. Systematic study of locally available plants belonging to the families prescribed in theory
syllabus
(Minimum of one plant representative for each family) (24h)
2. Demonstration of herbarium techniques.
3. Identification,medicinal value & active principle present in the following plants : Tulasi (*Ocimum sanctum*), Karakaya (*Terminalia chebula*), Kalabanda (*Aloe vera*). (6 h)
4. Ethnomedicinal value/practice of the following plan
Aswagandha (*Withania somnifera*), Sarpagandha (*R serpentina***)**, Amla (*Phyllanthus emb*
Brahmi (*Bacopa monnieri*) (6h)
5. Pharmacognosy:
Powder ana (*per longam),* Nela usiri (*Phyllanthus niruri*),
tic (sectional study) of the following:
(*Tinospora cordifolia*)and Turmeric (*Curcuma longa*). (6h)
6. Candidate have to submit at least 30 herbarium sheets

B.SC (CBCS) BOTANY- II YEAR
Semester-IV- Paper IV
Plant Anatomy, Embryology and Palynology
DSC-1D (4 hrs./week) Theory syllabus
Credits-4
(60 hours)

UNIT - I:

1. Meristems*:* Types, histological organization of shoot and root apices and theories. (3h)
2. Tissues and Tissue Systems*:* Simple, complex and special tissues. (6 h)
3. Leaf: Ontogeny, diversity of internal structure; stomata and epidermal outgrowths.

UNIT-II

4. Stem and root anatomy*:* Vascular cambium - Formation and funct (3h)
5. Anomalous secondary growth of Stem - *Achyranthe B h Dracaena;*
Root– *Beta vulgaris* (5h)
6. Wood structure*:* General account. Study of local tim*a grandis*),
Rosewood, (*Dalbergia latefolia*), Red sanders *p nus*) Nallamaddi
(*Terminalia tomentosa*) and Neem (*Az* (7h)

UNIT - III

7. Introduction: History a e of Embryology. (2h)
8. Anther struc enesis and development of male gametophyte. (6h)
yp ; Megasporogenesis; types and development of female
(7h)
10. Pollination - Types; Pollen - pistil interaction. Fertilization. (4h)
11. Endosperm - Development and types. Embryo - development and types; Polyembryony
and Apomixis - an outline. (5h)
12.. Palynology- Pollen morphology, NPC system and application of Palynology. (6h)

B.SC (CBCS) BOTANY- II YEAR
Semester-IV- Paper IV
Plant Anatomy, Embryology and Palynology
Practical syllabus
(45 hours)

Suggested Laboratory Exercises:

1. Demonstration of double staining technique. (3 h)
2. Tissue organization in root and shoot apices using permanent slides (3 h)
3. Preparation of double stained Permanent slides

Primary structure: Root - *Cicer, Canna*; Stem – *Tridax, Sorghum*
Secondary structure: Root – *Tridax* sp.; Stem –*Pongamia*
Anomalous secondary structure: Examples as given in theory syllabu (6 h)

4. Stomata types using epidermal peels. (3 h)
5. Microscopic study of wood in T.S., T.L.S. and R.L.S (6 h)
6. Structure of anther and microsporogenesis using per (3 h)
7. Structure of pollen grains using whol *us, Acacia* and Grass). (3 h)
8. Pollen viability test using Evans Blu (3 h)
9. Study of ovule types and de stages of embryosac. (3 h)
10. Structure of endosper d cellular); Developmental stages of dicot and monocot embryos usi es. (3 h)
11 Isolati of embryo (using *Cymopsis / Senna* / *Crotalaria*) (3 h)

SATAVAHANA UNIVERSITY, KARIMNAGAR, TELANGANA STATE, INDIA

DEPARTMENT OF COMMERCE

SYLLABUS STRUCTURE OF

B.Com.(General) & B. Com (Computer Application)

under CBCS w.e.f. AY 2016 –17

FIRST YEAR: SEMESTER-I

Course Code	*Course Type*	*Title of the Paper*	*PPW (Hours)*	*Credits*	*Exam Duration*	*Internal Marks*	*External Marks*	*Max. Marks*
BCO101	AECC-1	Environment Studies	2	2	2 Hrs	10	40	50
BCO102	CC-1A	English	5	5	3 Hrs	20	80	100
BCO103	CC-2A	Second Language	5	5	3 Hrs	20	80	100
BCO104	DSC-1A	Financial Accounting – I	5	5	3 Hrs	20	80	100
BCO105	DSC-2A	Business Economics	5	5	3 Hrs	20	80	100
BCO106	DSC-3A	Business Organization	4	4	3 Hrs	20	80	100
BCO107	DSC-4A	Information Technology	3L+2P	4	3 Hrs	20	60T+20P	100
Total			**30**	**30**				**650**

FIRST YEAR: SEMESTER-II

Course Code	*Course Type*	*Title of the Paper*	*PPW (Hours)*	*Credits*	*Exam Duration*	*Internal Marks*	*External Marks*	*Max. Marks*
BCO201	AECC-2	Gender Sensitisation	2	2	2 Hrs	10	40	50
BCO202	CC-1B	English	5	5	3 Hrs	20	80	100
BCO203	CC-2B	Second Language	5	5	3 Hrs	20	80	100
BCO204	DSC-1B	Financial Accounting – II	5	5	3 Hrs	20	80	100
BCO205	DSC-2B	Managerial Economics	5	5	3 Hrs	20	80	100
BCO206	DSC-3B	Principles of Management	4	4	3 Hrs	20	80	100
BCO207	DSC-4B	Foreign Trade	4	4	3 Hrs	20	80	100
		Programming with C (only for B.Com CA)	3L+2P		3 Hrs	20	60T+20P	100
Total			**30**	**30**				**650**

SECOND YEAR: SEMESTER-III								
Course Code	*Course Type*	*Title of the Paper*	*PPW (Hours)*	*Credits*	*Exam Duration*	*Internal Marks*	*External Marks*	*Max. Marks*
BCO301	SEC-1	Communicative Skills in English	2	2	2 Hrs	10	40	50
BCO302	CC-1C	English	5	5	3 Hrs	20	80	100
BCO303	CC-2C	Second Language	5	5	3 Hrs	20	80	100
BCO304	DSC-1C	Advanced Accounting	5	5	3 Hrs	20	80	100
BCO305	DSC-2C	Business Statistics-I	5	5	3 Hrs	20	80	100
BCO306	DSC-3C	Income Tax -I	4	4	3 Hrs	20	80	100
BCO307	DSC-4C	Entrepreneurial Development, Business Ethics (or)	4	4	3 Hrs	20	80	100
		Fundamentals of Web Designing (For BCom (CA) oonly)	3L+2P		3 Hrs	20	60T+20P	100
Total			**30**	**30**				**650**

SECOND YEAR: SEMESTER-IV								
Course Code	*Course Type*	*Title of the Paper*	*PPW (Hours)*	*Credits*	*Exam Duration*	*Internal Marks*	*External Marks*	*Max. Marks*
BCO401	SEC-2	Basic Computer Skills	2	2	2 Hrs	10	40	50
BCO402	CC-1D	English	5	5	3 Hrs	20	80	100
BCO403	CC-2D	Second Language	5	5	3 Hrs	20	80	100
BCO404	DSC-1D	Corporate Accounting	5	5	3 Hrs	20	80	100
BCO405	DSC-2D	Business Statistics-II	5	5	3 Hrs	20	80	100
BCO406	DSC-3D	Income Tax –II	4	4	3 Hrs	20	80	100
BCO407	DSC-4D	Financial Inst.&Markets (BCom Gen)	4	4	3 Hrs	20	80	100
		RDBMS (For B.Com (CA))	3L+2P		3 Hrs	20	60T+20P	100
Total			**30**	**30**				**650**

THIRD YEAR: SEMESTER-V								
Course Code	*Course Type*	*Title of the Paper*	*PPW (Hours)*	*Credits*	*Exam Duration*	*Internal Marks*	*External Marks*	*Max. Marks*
BCO501	SEC-3	Practice of General Insurance	2	2	2 Hrs	10	40	50
BCO502	GEC-1	Public Health & Hygeine	2	2	2 Hrs	10	40	50
BCO503	DSC-1E	Cost Accounting	5	5	3 Hrs	20	80	100
BCO504	DSC-2E	Business Law	5	5	3 Hrs	20	80	100
BCO505	DSC-3E	Banking Theory & Practice	4	4	3 Hrs	20	80	100
BCO506	DSC-4E	Computerised Accounting	3T+2P	4	3 Hrs	20	60T+20P	100
		Financial Institutes & Markets (For BCom (CA) only)	4		3 Hrs	20	80	100
BCO507	DSE-1E	Financial Management Spl-1 (OR)	4	4	2 Hrs	20	80	100
		OOPs with C++ (For BCom(CA))	3T+2P		3 Hrs	20	60T+20P	100
BCO508	DSE-2E	Principles of Marketing Spl-2 (OR)	4	4	3 Hrs	20	80	100
		Computerised Accounting (For BCom(CA) only)	3T+2P		3 Hrs	20	60T+20P	100
Total			**30**	**30**				**700**

THIRD YEAR: SEMESTER-VI								
Course Code	*Course Type*	*Title of the Paper*	*PPW (Hours)*	*Credits*	*Exam Duration*	*Internal Marks*	*External Marks*	*Max. Marks*
BCO601	SEC-4	Regulation of Insurance Business	2	2	2 Hrs	10	40	50
BCO602	GEC-2	Water Resource Management	2	2	2 Hrs	10	40	50
BCO603	DSC-1E	Managerial Accounting	5	5	3 Hrs	20	80	100
BCO604	DSC-2E	Company Law	5	5	3 Hrs	20	80	100
BCO605	DSC-3E	Auditing	4	4	3 Hrs	20	80	100
BCO606	DSC-4E	Commerce Lab	4	4	-	-	70R+30VV	100
BCO607	DSE-3E	Human Resource Management Spl-1	4	4	3 Hrs	20	80	100
		E-Commerce (For BCom (CA)	3T+2P		3 Hrs	20	60T+20P	100
BCO608	DSE-4E	Tax Planning & Management Spl-2	4	4	3 Hrs	20	80	100
		Management Information System (For BCom (CA)	3T+2P		3 Hrs	20	60T+20P	100
Total			**30**	**30**				**700**

SATAVAHANA UNIVERSITY, KARIMNAGAR

DEPARTMENT OF COMMERCE

B.Com. (General) & B. Com (Computer Applications) ***(w.e.f. AY 2016-17)***

Adopted theB.Com Common Core Syllabi for All Universities in Telangana, prepared by

Telangana State Council Of Higher Education, Govt. of Telangana

SEMESTER- I

FINANCIAL ACCOUNTING-1

Paper: BCO104 Max Marks: 80 T + 20 I = 100

PPW: 5 Hrs Exam Duration: 3 Hrs

Objective: *to acquire conceptual knowledge of basics of accounting and preparation of final accounts of sole trader.*

UNIT-I: ACCOUNTING PROCESS:

Financial Accounting: Introduction – Definition – Evolution – Functions-Advantages and Limitations –Users of Accounting Information- Branches of Accounting – Accounting Principles: Concepts and Conventions- Accounting Standards– Meaning – Importance – List of Accounting Standards issued by ASB -– Accounting System- Types of Accounts – Accounting Cycle- Journal-Ledger and Trial Balance. (Including problems)

UNIT-II: SUBSIDIARY BOOKS:

Meaning –Types - Purchases Book - Purchases Returns Book - Sales Book - - Sales Returns Book - Bills Receivable Book - Bills Payable Book – Cash Book - Single Column, Two Column, Three Column and Petty Cash Book - Journal Proper.(Including problems)

UNIT-III: BANK RECONCILIATION STATEMENT:

Meaning – Need - Reasons for differences between cash book and pass book balances –Favourable and over draft balances – Ascertainment of correct cash book balance (Amended Cash Book) - Preparation of Bank Reconciliation Statement. (Including problems)

UNIT-IV: RECTIFICATION OF ERRORS AND DEPRECIATION:

Capital and Revenue Expenditure – Capital and Revenue Receipts: Meaning and Differences – Deferred Revenue Expenditure. Errors and their Rectification: Types of Errors - Suspense Account – Effect of Errors on Profit. (Including problems)

Depreciation (AS-6): Meaning – Causes – Difference between Depreciation, Amortization and Depletion - Objectives of providing for depreciation – Factors affecting depreciation – Accounting Treatment – Methods of depreciation: Straight Line Method - Diminishing Balance Method (Including problems)

UNIT-V: FINAL ACCOUNTS:

Final Accounts of Sole Trader: Meaning -Uses -Preparation of Manufacturing, Trading and Profit & Loss Account and Balance Sheet – Adjustments – Closing Entries. (Including problems)

SUGGESTED READINGS:

1. Accountancy-I: Haneef and Mukherjee, Tata McGraw Hill Company.

2. Principles & Practice of Accounting: R.L.Gupta&V.K.Gupta, Sultan Chand.

3. Accountancy-I: S.P. Jain & K.L Narang, Kalyani Publishers.

4. Accountancy–I: Tulasian, Tata McGraw Hill Co.

BUSINESS ECONOMICS

Paper: BCO105 Max Marks: 80 T + 20 I = 100

PPW: 5 Hrs Exam Duration: 3Hrs

Objective: *to acquire the knowledge of application of economic principles and tools in business practices.*

UNIT-I: INTRODUCTION:

Business Economics: Meaning - Nature – Characteristics - Importance and Role - Micro & Macro Economics - Scope - Objectives - Law of Diminishing marginal utility - Law of Equi-marginal utility.

UNIT- II: DEMAND ANALYSIS:

Meaning – Function - Factors influencing Demand -Types of Demand -Demand Curve - Law of Demand –Exceptions to the law of demand-Elasticity of Demand: Concept - Types of elasticity of demand-price, income and cross Elasticity of Demand –measurement of elasticity—arc and point methods—Importance of various Elasticity of Demand

UNIT-III: SUPPLY ANALYSIS:

Law of Supply - Factors influencing Supply - Market Equilibrium- Consumer Surplus - Theory of Consumer behavior - Utility and indifference curve analysis.

UNIT–IV: PRODUCTION ANALYSIS:

Concept of Production –production function-Total Production - Marginal Production - Average Production –returns to a factor- Law of Variable Proportions - Law of Returns to Scale - Isocost – Isoquants - Economies and Dis-economies of Scale.

UNIT-V: COST AND REVENUEANALYSIS:

Theory of Cost - Concepts of Cost - Short run and Long run cost curves - Traditional and Modern Approaches -Revenue Curves–relationship between total marginal and average revenues- --Break Even Analysis—Meaning – Assumptions – Uses and Limitations.

SUGGESTED READINGS:

Business Economics: V. G. Mankar, Himalaya Publishing House

Managerial Economics: Vanith Agrawal, Pearson Education

Business Economics: H. L. Ahuja, S. Chand & Co. Ltd.

Business Economics : R. K. Lekhi, Kalyani Publishers

Business Economics: D. M. Mithani, Himalaya Publishing House

Business Economics: P. N. Chopra, Kalyani Publishers

Essential of Business Economics: D. N. Dwivedi, Vikas Publishers

Managerial Economics: Varshney and Maheswari, Sultan Chand

Business Economics: P. K. Mehta, Tax Mann Publication.

BUSINESS ORGANISATION

Paper: BCO106 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3Hrs

Objective: To acquaint the students with the basics of Commerce and Business concepts and functions and forms of Business Organization

UNIT-1: FUNDAMENTAL CONCEPTS:

Concepts of Business, Trade, Industry and Commerce - Classification - Relationship between Trade. Industry and Commerce - Nature of Business - Objectives of Business – Functions of Business- Social Responsibility of a business - Steps to Start an Enterprise

UNIT-II: BUSINESS ORGANIZATION:

Forms of Business Organization - Classification - Factors Influencing the Choice of Suitable Form of Organization - Sole Proprietorship – Meaning, Definition - Characteristics - Advantages and Disadvantages - Suitability of Sole Proprietorship - Partnership -Kinds of Partners - - Partnership Deed –- Meaning – Contents - Registration of Partnership Advantages and Disadvantages of Partnership - Suitability of Partnership - Limited liability partnership – Hindu Undivided Family - Meaning - Characteristics - Advantages and Disadvantages - Co-Operative Organization – Characteristics -Types of Co-Operative Societies - Limitations of Cooperatives.

UNIT-III: FORMATION OF JOINT STOCK COMPANY:

Joint Stock Company - Meaning - Definition - Characteristics - Advantages and Disadvantages - Kinds of Companies -Promotion - Stages of Promotion - Promoter - Characteristics - Kinds - Preparation of Important Documents - Memorandum of Association - Clauses - Articles of Association - Contents – Prospectus - Contents – Red herring Prospectus- Statement in lieu of Prospectus.

UNIT-IV: SOURCES OF FINANCE:

Industrial Finance - Long Term and Short Term Finance - Fixed and Working Capital Finance - Sources of Corporate Finance (A brief introduction to Shares and Debentures, Retained Earnings, Underwriting, Inter Company Investments and Venture Capital, Angel Investors, lease, hire purchase, franchising) .

UNIT V: STOCK EXCHANGE AND MUTUAL FUNDS:

Stock Exchange, Functions — Working of Stock Exchanges, Mutual Funds –Importance, Functions, Types — Role of SEBI in Regulating Stock Exchanges and Mutual Funds in India

SUGGESTED READINGS:

Business Organization & Management: Sharma Shashi K. Gupta, Kalyani Publishers

Business Organization: Sharma Shashi K. Gupta, Kalyani publishers.

Organization & Management: R. D. Agarwal, McGraw Hill.

INFORMATION TECHNOLOGY

Paper: BCO104 Max Marks: 60 T + 20 I + 20 P= 100

PPW: 4 (3T & 2P) Time: 3 Hrs.

Objective: *to acquire basic knowledge in Information Technology and its applications in the areas of business.*

UNIT-I: INTRODUCTION:

Introduction to computers - Generations of computers – An overview of computer system - Types of computers - Input & Output Devices.

Looking inside the machine: Basic components of a computer system - Control unit – ALU - Input/output functions - Memory – RAM – ROM – EPROM - PROM and Other types of memory.

UNIT-II: OPERATING SYSTEM (OS):

Meaning - Definition & Functions - Types of OS - Booting process - DOS – Commands (internal & external) - Wild card characters – Virus & Hackers – Cryptography & cryptology

Windows: Using the Start Menu –Control Panel – Using multiple windows – Customizing the Desktop – Windows accessories (Preferably latest version of windows or Linux Ubuntu).

UNIT-III: WORD PROCESSING:

Application of word processing - Menus & Tool Bars - Word processor – Creating – Entering - Saving & printing the document - Editing & Formatting Text - Mail Merge and Macros (Preferably latest version of MS Word or Libre Office Writer).

UNIT-IV: SPREAD SHEET:

Application of work sheet/spread sheet - Menus & Tool bars - Creating a worksheet - Entering and editing of numbers - Cell referencing - Worksheet to analyze data with graphs & Charts.

Advanced tools: Functions – Formulae – Formatting numbers - Macros – Sorting- Filtering - Validation &Consolidation of Data (Preferably latest version of MS Excel or Libre Office Calc)

UNIT-V: POWER POINT PRESENTATION:

Application of Power Point Presentation – Menus & Tool bars – Creating presentations – Adding - Editing and deleting slides - Templates and manually creating presentation– Slide show – Saving - Opening and closing a Presentation –Types of slides - Slide Views - Formatting – Insertion of Objects and Charts in slides - Custom Animation and Transition (Preferably latest version of MS Power Point presentation - Libre Office Impress).

Internet &Browsing: Services available on internet – WWW – ISP – Browsers.

Multimedia: Application of multimedia – Images – Graphics-Audio and Video – IT security.

SUGGESTED READINGS:

Introduction to Computers: Peter Norton, McGraw Hill.

SEMESTER- II

FINANCIAL ACCOUNTING-II

Paper: BCO201 Max Marks: 80 T + 20 I = 100

PPW: 5 Hrs Exam Duration: 3 Hrs

Objective: to acquire accounting knowledge of bills of exchange and other business accounting methods.

UNIT-I: BILLS OF EXCHANGE:

Bills of Exchange - Definition- Distinction between Promissory note and Bills of exchange-Accounting treatment of Trade bills: Books of Drawer and Acceptor- Honour and Dishonour of Bills- Renewal of bills- Retiring of bills under rebate- Accommodation bills.(Including problems)

UNIT-II:CONSIGNMENT ACCOUNTS:

Consignment – Meaning – Features–Proforma invoice - Account sales – Del crederecommission-Accounting treatment in the books of the consignor and the consignee - Valuation of consignment stock –Treatment of Normal and abnormal Loss - Invoice of goods at a price higher than the cost price. (Including problems)

UNIT-III:JOINT VENTURE ACCOUNTS:

Joint Venture – Meaning –Features-Difference between Joint Venture and Consignment-Accounting Procedure-Methods of Keeping Records for Joint Venture Accounts-Method of Recording in co-ventures books-Separate Set of Books Method- Joint Bank Account-Memorandum Joint Venture Account (Including problems)

UNIT-IV: ACCOUNTS FROM INCOMPLETE RECORDS:

Single Entry System – Meaning -Features–Difference between Single Entry and Double Entry systems -Defects in Single Entry System - Books and accounts maintained - Ascertainment of Profit - Statement of Affairs and Conversion method (Including problems)

UNIT-V: ACCOUNTING FOR NON-PROFIT ORGANIZATIONS:

Non- Profit Organziation – Meaning – Features – Receipts and Payments Account – Income and Expenditure Account – Balance Sheet(Including problems)

SUGGESTED READINGS:

1. Accountancy-I: Haneef and Mukherjee, Tata McGraw Hill Co.

2.Principles and Practice of Accounting: R.L. Gupta & V.K. Gupta,Sultan Chand & Sons.

3. Accountancy–I: Tulasian, Tata McGraw Hill Co.

4. Accountancy–I: S.P. Jain & K.L Narang, Kalyani.

MANAGERIAL ECONOMICS

Paper: BCO202 Max Marks: 80 T + 20 I = 100

PPW: 5 Hrs Exam Duration: 3Hrs

Objective: to impart conceptual and practical knowledge of managerial economics.

UNIT-I: NATURE AND SCOPE OF MANAGERIAL ECONOMICS:

Characteristics of managerial economics – Nature and scope of managerial economics -Importance of managerial economics - Basic economic tools in managerial economics - managerial economist role and responsibility.

UNIT-II: DEMAND FORECASTING:

Demand estimations for major consumer durables and non-durable products – Demand forecasting techniques.

UNIT–III: MARKET ANALYSIS:

Definition of market – Market structure (Perfect competition, Imperfect competition) – Price determination - Firms equilibrium in perfect competition, monopoly, monopolistic, oligopoly, duopoly.

UNIT-IV: MACROECONOMICS FOR MANAGERS:

National income – Concepts – Measurements of national income – Business cycle: Nature, Phases, Causes – Inflation causes and control – Deflation and stagflation.

UNIT-V: WELFARE ECONOMICS:

Introduction – General equilibrium of production and exchange – Utility possibility frontier – Social welfare function

SUGGESTED READINGS:

Managerial Economics: Craig H Peterson and Jain, Pearson education

Managerial Economics: Gupta, Tata Mc Graw Hill

Managerial Economics: Maheshwari and Gupta, Sultan Chand & Sons

Managerial Economics: Dr. P.C. Thomas, Kalyani Publishers

Managerial Economics: H.L. Ahuja, S. Chand and Company

Managerial Economics: Mithani, Himalaya Publications

Managerial Economics: R.L. Varshny and K.L. M Maheshwari, Sultan Chand

Managerial Economics: P. Venkataiah and Surya Prakash, Vaagdevi Publishers

PRINCIPLES OF MANAGEMENT

Paper: BCO203 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3Hrs

Objective: *to familiarize the students with the basic principles of management.*

UNIT-I: INTRODUCTION OF MANAGEMENT:

Introduction - Meaning of Management - Feature (or) Characteristics of Management- Importance of Management - Functions of Management - Administration & Management - Definition of Manager - Function of Manager - Role of Manager.

UNIT-II: MANAGEMENT THEORY:

Introduction of Management Theory - Classification of Management Theory - Classical Theory and Modern Management Theory - Frederick Winslow Taylor, Scientific Management - Principles of Scientific management - Elements or Feature of Scientific Management – Peter F. Ducker, Max Weber - George Elton Mayo - Henry Fayal - Principle of Management - Functions of Management.

UNIT-III: PLANNING:

Definition of Planning - Characteristic of Planning - Objectives of Planning - Importance of Planning - Advantages of Planning - Steps of Planning Process - Essentials of Good Planning - Limitation of Planning - Methods of Planning (Policy, Procedures, Methods, Rule).

UNIT-IV: COMMUNICATION, MOTIVATION, LEADERSHIP:

Definition of Communication - Features of Communication - Type of Communication - Communication Process - Barriers of Communication - Gateways' to effectiveness Communication - Introduction of Motivation - Classification of Motivation – Theories - Motivational Techniques - Definition of Leadership - Qualities of Leadership - Types of Leadership - Leadership theories.

UNIT-V: CENTRALIZATION, DECENTRALIZATION & DELEGATION OF AUTHORITY:

Introduction of Centralization - Characteristics of Centralization - Introduction of De-Centralization – Advantages of Centralization & De-Centralization - Definition of Authority - Characteristics of Authority - Sources of Authority

Definition of Delegations - Delegations of Authority - Importance of Delegations of Authority - Advantages of Delegations & Authority - Problems of Delegations of Authority.

SUGGESTED READINGS:

Principles and Practice of Management: R.S.Gupta, B.D.Sharma, W.S. Bhalla, Kaylani

Management: Stephen P. Robbins, Person

Principles of Management: T Ramasamy, Himalaya Publication

Principles of Management Concept: Rajeshviwanathan, Himalaya Publication

FOREIGN TRADE

(B.Com General only except B.Com Computer Applications)

Paper: BCO204 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3Hrs

Objective: to gain the knowledge of Indian and foreign trade policies and international institutions.

UNIT–I: FOREIGN TRADE:

Meaning and Definition - Types of Foreign Trade - Instruments of Foreign Trade.

UNIT-II: BALANCE OF TRADE AND BALANCE OF PAYMENTS:

Introduction – Meaning - Components of BOT & BOP - Concept of Disequilibrium – Causes - Remedies for Correcting Balance of Payments in International Trade.

UNIT-III: OBJECTIVE S OF INDIA'S TRADE POLICY:

Importance and its Implementation - Exchange Control – Objectives - Exchange Rate -Adjustments – Devaluation – Revaluation - Depreciation of Currency.

UNIT–IV: ROLE OF FOREIGN TRADE IN ECONOMIC:

Growth - Significance of Foreign Trade – Merits - Demerits - Regional Economic Groupings – SAARC - ASEAN – BRICS - Free Trade Area-Custom Union - Common Markets-Economic Union - European Union.

UNIT–V: INTERNATIONAL ECONOMIC INSTITUTIONS:

IMF: Objectives, Functions - World Bank: Objectives, Functions, Subsidiaries of World Bank – IMF Vs. IBRD – UNCTAD: Introduction, Aims, Features – WTO: Introduction, Aims, Features.

SUGGESTED READINGS:

International Marketing: Rathore & Jain, Himalaya Publishers.

International Marketing: Kushpat S. Jain & Rimi Mitra, Himalaya Publishers

International Economics: SSM Desai & Nirmal Bhalerao, Himalaya Publishers.

International Business Environment & Foreign Exchange Economies: Singh & S. Srivastava,

Foreign Trade and Foreign Exchange: O.P Agarwal & B.K. Chaudri, Himalaya Publishers

International Financial Markets & Foreign Exchange: Shashi.K.Gupta & Praneet Rangi, Kalyani Publishers

International Economics: Theory & Practice: Paul R. Krugman, Pearson Publishers.

PROGRAMMING WITH C

(For B.Com Computer Applications Only)

Paper: BCC204 Max Marks: 60 T + 20 I + 20 P= 100

PPW: 4 (2T+2L) Exam Duration: 3 Hrs.

Objectives:*to gain the skills of Structured (Procedural/Functional) Programming using C Language.*

UNIT–I: INTRODUCTION TO C LANGUAGE, DATA TYPES AND I/O OPERATIONS:

Introduction: Types of Languages – History of C language – Basic Structure – Creating – Compiling - Linking and Executing the C Program - Pre-processors in "C".

Types and I/O operations: Keywords & Identifiers – Constants – Variables - Scope and Life of a Variable - Data types - Storage classes - Reading a character or values - Writing a character or value - Formatted Input and Output operations.

UNIT-II: OPERATORS, EXPRESSIONS AND DECISION MAKING:

Operators: Introduction – Arithmetic – Relational – Logical – Assignment - Conditional - Special operators – Expressions: Arithmetic – Evaluation - Type conversions.

Decision Making & Looping: Introduction - If statements - If-else statements - Switch statements - Conditional statements - While statements - Do statements - For Statements.

UNIT-III: ARRAYS AND STRINGS:

Arrays: Introduction - Defining an array - Initializing an array - One dimensional array – Two dimensional array - Dynamic array.

Strings: Introduction - Declaring and initializing string variables - Reading and Writing strings - String handling functions.

UNIT-IV: BUILT-IN FUNCTIONS AND USER-DEFINED FUNCTIONS:

Built–in functions: Mathematical functions - String Functions - Character functions - Date functions. User defined functions: Introduction - Need for user defined functions - Elements of functions - Return values and their types - Function declaration - Function calls - Recursive functions.

UNIT-V: STRUCTURES AND POINTERS:

Structures: Introduction - Declaring structures variables - Accessing structure members - Functions and Structures - Array of structures - Enumerated Data types - Introduction to Unions.

Pointers: Fundamentals - Understanding pointers - Address - Declaration of Pointers.

LAB: PROGRAMS USING C.

SUGGESTED READINGS:

Programming in ANSCI C: Balaguruswamy, McGraw Hill.

Let Us C: Y.Kanetkar, BPB.

SEMESTER- III

ADVANCED ACCOUNTING

BCO301 Max Marks: 80 T + 20 I = 100

PPW: 5 Hrs Exam Duration: 3 Hrs

Objective: to acquire accounting knowledge of partnership firms and joint stock companies

UNIT-I: PARTNERSHIP ACCOUNTS-I:

Meaning – Partnership Deed - Capital Accounts (Fixed and Fluctuating) – Admission of a Partner – Retirement and Death of a Partner (Excluding Joint Life Policy)(Including problems)

UNIT-II: PARTNERSHIP ACCOUNTS–II:

Dissolution of Partnership – Insolvency of a Partner (excluding Insolvency of all partners) – Sale to a Company (Including problems)

UNIT-III: ISSUE OF SHARES, DEBENTURES, UNDERWRITING AND BONUS SHARES:

Issue of Shares at par, premium and discount - Prorata allotment – Forfeiture and Re-issue of Shares – Issue of Debentures with Conditions of Redemption – Underwriting: Meaning –Conditions- Bonus Shares: Meaning – SEBI Guidelines for Issue of Bonus Shares – Accounting of Bonus Shares(Including problems)

UNIT-IV: COMPANY FINAL ACCOUNTS AND PROFIT PRIOR TO INCORPORATION:

Companies Act 2013: Structure – General Instructions for preparation of Balance Sheet and Statement of Profit and Loss – Part-I: Form of Balance Sheet – Part-II: Statement of Profit and Loss – Preparation of Final Accounts of Companies - Profits Prior to Incorporation- Accounting treatment. (Including problems)

UNIT-V: VALUATION OF GOODWILL AND SHARES:

Valuation of Goodwill: Need – Methods: Average Profits, Super Profits and Capitalization Methods -Valuation of Shares: Need –Net Assets, Yield and Fair Value Methods. (Including problems)

SUGGESTED READINGS:

Principles and Practice of Accounting: R.L. Gupta & V.K. Gupta, Sultan Chand & Sons.

Advanced Accountancy: Shukla and Grewal, S.Chand& Co.

Advanced Accountancy: R.L.Gupta&Radhaswamy, Sultan Chand & Sons.

Advanced Accountancy (Vol-II): S.N.Maheshwari&V.L.Maheswari, Vikas.

Accountancy–III: Tulasian, Tata McGraw Hill Co.

Advanced Accountancy: Arulanandam; Himalaya.

Accountancy–III: S.P. Jain & K.L Narang, Kalyani Publishers.

BUSINESS STATISTICS-I

Paper: BCO302 Max Marks: 80 T + 20 I = 100

PPW: 5 Hrs Exam Duration: 3hrs

Objective: to inculcate analytical and computational ability among the students.

UNIT-I: INTRODUCTION:

Origin and Development of Statistics – Definition - Importance and Scope Limitations Of Statistics - Distrust of Statistics.

Statistical Investigation: Planning of statistical investigation - Census and Sampling methods - Collection of primary and secondary data - Statistical errors and approximation - classification and Tabulation of data - Frequency distribution.

Diagrammatic and Graphic Presentation: One Dimensional and Two Dimensional Diagrams – Pictograms – Cartograms - Technique of Construction of Graphs - Graphs of Frequency Distribution - Graphs of Time Series or Histograms.

UNIT-II: MEASURES OF CENTRAL TENDENCY:

Arithmetic Mean - Geometric Mean - Harmonic Mean - Mode – Median - Qualities and Percentiles - Simple and Weighted Averages - Uses and Limitations of different Averages.

UNIT-III: DISPERSION:

Significance of the Measures of Dispersion - Characteristics for an Ideal Measure of Dispersion - Absolute and Relative Measures of Dispersion - Measures of Dispersion - Range - Quartile Deviation - Mean Deviation and Coefficients - Standards Deviation - Coefficient of Variation.

UNIT-IV: SKEWNESS AND KURTOSIS:

Measures of Skewness - Karl Pearson's Coefficient of Skewness - Bowley's Coefficient of Skewness - Kelly's Measure of Skewness - Kurtosis.

UNIT-V: CORRELATION:

Types of Correlation - Correlation and Causation - Methods of Studying Correlation - Scatter Diagram Method - Karl Person's Coefficient of Correlation - Probable Error and Interpretation of Coefficient of Correlation - Rank Difference Method and Concurrent Deviation Method.

SUGGESTED READINGS:

Statistics for Management: Levin & Rubin, Pearson,

Fundamentals of Statistics: Gupta S.C, Himalaya

Statistics: E. Narayanan Nadar, PHI Learning

Business Statistics: Dr. J. K. Thukral, Taxmann Publications

Business Statistics: K. Alagar, Tata Mc Graw Hill

Fundamentals of Statistical: S. P Gupta, Sultan Chand

INCOME TAX – I

Paper: BCO303 Max Marks: 80 T + 20 I = 100
PPW: 4 Hrs Exam Duration: 3Hrs

Objective: *to acquire the conceptual and legal knowledge about Income Tax provisions relating to computation of Income from different heads with reference to an Individual Assessee.*

UNIT–I: INTRODUCTION:

Direct and Indirect Taxes – Canons of Taxation - Features and History of Income Tax in India – Definitions and Basic Concepts of Income Tax: Assessee – Deemed Assessee – Assessee-in-default – Assessment Year – Previous Year – Person – Income – Gross Total Income – Total Income – Income Tax general rule and Exemptions to the Rule – Incomes Exempt from Tax.

Residential Status and Scope of Total Income: Meaning of Residential Status – Conditions applicable to an Individual Assessee – Incidence of Tax – Types of Incomes – Problems on computation of Total Income of an Individual based on Residential Status.

UNIT-II: AGRICULTURAL INCOME:

Introduction – Definition – Tests to determine Agricultural Income – Partly Agricultural and partly Non-Agricultural Income – Integration: conditions – provisions – computation of Tax on Integration process. Heads of income: Gross Total Income – Taxable Income – Income Tax Rates.

UNIT–III: INCOME FROM SALARIES:

Definition of 'Salary' – Characteristics of Salary – Computation of Salary Income: Salary u/s 17(1) – Annual Accretion – Allowances – Perquisites – Profits in lieu of Salary – Deductions u/s. 16 – Problems on computation of Income from Salary.

UNIT–IV: INCOME FROM HOUSE PROPERTY:

Definition of 'House Property' – Exempted incomes from House Property – Annual Value – Determination of Annual Value for Let-out House and Self-occupied House – Deductions u/s.24 out of Annual Value of Let-out and Self-occupied House Properties – Problems on computation of Income from House Property.

UNIT–V: PROFITS AND GAINS OF BUSINESS OR PROFESSION:

Definition of 'Business and Profession' – Procedure for computation of Income from Business – Rules thereof – Revenue and Capital nature of Incomes and Expenses – Allowable Expenses u/s. 30 to 37 – Expenses expressly disallowed – Deemed Profits – Valuation of Stock – Miscellaneous provisions u/s 44.

Depreciation: Meaning – Conditions for charge of depreciation – Assets used for Business – Block of Assets – Rates of Depreciation – Miscellaneous Provisions about depreciation – Computation of Depreciation –problems on computation of Income from Business.

Income from Profession: Rules thereof – procedure – problems on computation of Income from Profession.

SUGGESTED READINGS:

Income Tax Law and Practice: V.P. Gaur & D.B Narang, Kalyani Publishers.

Direct Taxes Law & Practice: Dr. Vinod K. Singhania & Dr. Kapil Singhania, Taxmann

Income Tax: B.B. Lal, Pearson Education.

ENTREPRENEURAL DEVELOPMENT & BUSINESS ETHICS

(For B.Com General only)

Paper: BCO304 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3Hrs

Objective: *to have exposure to the e*ntrepreneurial *culture, development and business ethics to set up and manage small units.*

UNIT–I: INTRODUCTION:

Entrepreneur: Evolution- Concept - Functions - Characteristics – Importance of Entrepreneur – Types of Entrepreneurs- Entrepreneurship- Entrepreneurial competencies- Women Entrepreneurs in India – Opportunities & Challenges.

UNIT–II: ENTREPRENEURIAL DEVELOPMENT:

Entrepreneurial opportunities in India Environment Scanning – Idea Generation – Transformation of Ideas into Opportunities - Idea & opportunity assessment – Market assessment – Trend spotting – Creativity & innovation – Innovative process – Selection of the right opportunity.

UNIT–III: PROJECT AND MSMEs:

Project: Concept of projects and classification - Project Identification - Project Formulation – Project Design - Project Planning and Appraisal - Social Cost – Benefit Analysis – Budget and Planning Financial Analysis & Project Financing - MSME – Govt. Policy and Support.

UNIT–IV: ENTTREPRENEURAL DEVELOPMENT POLICIES AND PROGRAMMES:

Entrepreneurship Development Programmes – Policies of the Government – Institutions for Entrepreneurship Development Training (EDIs) in India: CED, MDI, EDII, IED, NIESBUD, EMC, STEPs, XISS, SIDO, SISIs - Role of Consultancy Organizations: IDCs, TCOs – Role of Financial Institutions and Banks.

UNIT–V: BUSINESS ETHICS:

Concept of Business Ethics - Moral Values - Utilitarianism and Universalism - Business Standards and Values - Concept of Corporate Social Responsibility.

SUGGESTED READINGS:

Entrepreneurship Development: A.Shankaraiah et al, Kalyani Publishers.

Fundamentals of Entrepreneurship: K.K. Patra, Himalaya Publishing House.

Entrepreneurship Development: Dr. S.S.Khanka, S.Chand.

Entrepreneurship Development: V.Gangadhar et al, Kalyani Publishers.

Entrepreneurship Development & Small Business Enterprises: Poornima Charantimath, Pearson.

Entrepreneurship: Robert D. Hisrich, McGraw Hill

FUNDAMENTALS OF WEB DESIGNING

(For B.Com CA only)

Paper: BCC605 Max Marks: 60 T + 20 I + 20 P= 100

PPW: 4 (3T & 2P) Time: 3 Hrs.

Objective of the course: The aim of this course is to provide the conceptual knowledge of web page design which enables the student to develop the skill of web page design

UNIT-I: Introduction to Basics of Internet: Concepts of Internet: Domain, IP Addressing, Resolving Domain Names, Overview of TCP/IP and its Services, WWW. Essential HTML: History of HTML-Creating a Web page-viewing a web page-checking your webpage- Working with Text: Formatting with HTML tags-Physical HTML Styles-Logical HTML Styles-Setting fonts-Headings Dynamic HTML-Introduction of DHTML- HTML vs. DHTML, Advantages of DHTML, CSS of DHTML, Event Handling, Data Binding, Browser Object Models

UNIT-II: Presenting and Arranging Text: Arranging Text- Using <DIV> and <SPAN>- Using layers-More Formatting power- Preformatting Text - Exposure to Various Tags (DIV, MARQUEE, NOBR,DFN, HR, LISTING, Comment, IMG), Color and Background of Web Pages. Lists and their Types.

Working with Images: Images in Web Pages — Graphic formats — Graphic programs and resources-using clipart — Graphics color — Creating images ~Attributes of Image Tag

UNIT-III : Links and Lists: Creating Hyperlinks — All about URLs — Creating Image Maps — Creating Lists— Creating Tables: The parts of a Table — Creating a Table — Adding a Border - Padding your cells — Widening the cell spacing — Aligning your data Horizontally - Aligning your Data vertically - Spanning columns — Spanning rows — Setting colors

Unit-IV: Working with Frames: To Frame or Not to Frame- Creating Horizontal Frames —Creating Horizontal and Vertical Frames — Named Frames — opening new browser windows. Working with Multimedia: Multimedia sound — Multimedia video — Multimedia 3D — Creating your own Multimedia — Connecting to External Multimedia files — Creating inline sound-Creating inline video.

UNIT-V: Working with Style sheets: What are Style sheets all about? — External Style sheets - Embedded Style sheets — Inline Styles — Creating Style Classes — Cascading Styles — Organizing Styles — Understanding Style specifications-Essential XML: What does XML Look Like?- Valid and Well Formatted XML Documents — XML Document Type Definitions — XML Schemas —

XML in Browser.

SUGGESTED READINGS:

HTML 4.0 BLACK BOOK By Steven Holzner, dreamtech Press

The Complete Reference by Thomas Powell

.

SEMESTER- IV

CORPORATE ACCOUNTING

Paper: BCO404 Max Marks: 80 T + 20 I = 100

PPW: 5 Hrs Exam Duration: 3 Hrs

Objective: to acquire the knowledge of AS-14 and preparation of accounts of banking and insurance companies.

UNIT-I: COMPANY LIQUIDATION:

Meaning – Modes - Contributory Preferential Payments – Statements of Affairs - Liquidator's Remuneration - Preparation of Liquidator's Final Statement of Account (Including problems)

UNIT-II: AMALGAMATION (AS-14):

Amalgamation: In the nature of merger and purchase – Calculation of Purchase Consideration – Accounting Treatment in the books of transferor and transferee companies. (Including problems)

UNIT-III: INTERNAL RECONSTRUCTION AND ACQUISITION OF BUSINESS:

Internal Reconstruction: Accounting treatment – Preparation of final statement after reconstruction- Acquisition of business when new set of books are opened- Debtors and Creditors taken over on behalf of vendors- When same set of books are continued(Including problems)

UNIT-IV: ACCOUNTS OF BANKING COMPANIES:

Books and Registers maintained – Slip system of posting – Rebate on Bills Discounted – Non-Performing Assets – Legal Provisions relating to final accounts - Final Accounts. (Including problems)

UNIT-V: ACCOUNTS OF INSURANCECOMPANIES AND INSURANCE CLAIMS:

Introduction – Formats-Revenue Account–Net Revenue Account - Balance Sheet - Valuation Balance Sheet – Net Surplus – General Insurance - Preparation of final accounts with special reference to Fire and Marine Insurance - Insurance claims- Meaning – Loss of Stock and Assets – Average Clause – Treatment of Abnormal Loss - Loss of Profit. (Including problems)

SUGGESTED READINGS:

1.Advanced Accountancy (Vol-II): S.N.Maheshwari&V.L.Maheswari, Vikas.

2. Accountancy–III: Tulasian, Tata McGraw Hill Co.

3. Advanced Accountancy: Arulanandam; Himalaya

4. Accountancy–III: S.P. Jain & K.L Narang, Kalyani Publishers

5. Advanced Accounting (Vol-II): Chandra Bose, PHI

6. Advanced Accountancy: Shukla and Grewal, S.Chand& Co

7. Advanced Accountancy: R.L.Gupta&Radhaswamy, Sultan Chand & Sons

8. Corporate Accounting: Sakshi Vasudeva, Himalaya.

BUSINESS STATISTICS-II

Paper: BCO402 Max Marks: 80 T + 20 I = 100

PPW: 5 Hrs Exam Duration: 3hrs

OBJECTIVE: *to inculcate analytical and computational ability among the students.*

UNIT-I: REGRESSION:

Linear and Non Linear Regression - Lines of Regression - Derivation of Line of Regression of Y on X - Line of Regression of X on Y - Using Regression Lines for Prediction.

UNIT-II: INDEX NUMBERS:

Uses - Types - Problems in the Construction of Index Numbers - Methods of Constructing Index Numbers - Simple and Weighted Index Number (Laspeyre's - Paasche's, Marshall – Edgeworth) - Tests of Consistency of Index Number: Unit Test - Time Reversal Test - Factor Reversal Test - Circular Test - Base Shifting - Splicing and Deflating of Index Numbers.

UNIT-III: TIME SERIES:

Components of a Time Series - Methods of Semi Averages - Methods of Moving Averages - Depersonalization of Data - Time Series Analysis in Forecasting.

UNIT-IV: PROBABILITY:

Terminology (Experiment – Event - Mutually Exclusive Events - Collectively Exhaustive Events - Independent Events - Simple and Compound Events) - Basics of Set Theory – Permutation – Combination - Approaches to Probability (Classical – Empirical – Subjective - Axiomatic Approach) - Theorems of Probability (Addition – Multiplication - Marginal and Baye's Theorem).

UNIT-V: THEORITICAL DISTRIBUTIONS:

Binomial Distribution: Utility – Importance – Conditions – Constants - Fitting of Binomial Distribution.

Poisson Distribution: Utility - Importance, Conditions, Constants, Fitting of Poisson Distribution – Simple Numerical.

Normal Distribution: Utility – Importance - Central Limit Theorem - Characteristics of a Normal Distribution - Simple Numerical in Normal Distribution (Areas Method Only).

SUGGESTED READINGS:

Statistics for Management: Levin & Rubin, Pearson,

Fundamentals of Statistics: Gupta S.C, Himalaya

Business Statistics: Theory & Application, P. N. Jani, PHI Learning

Business Statistics: Dr. J. K. Thukral, Taxmann Publications

Business Statistics: K. Alagar, Tata Mc Graw Hill

Fundamentals of Statistical: S. P Gupta , Sultan Chand

INCOME TAX – II

Paper: BCO403 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3Hrs

Objective:*to acquire the conceptual and legal knowledge about Income Tax provisions relating to computation of Income from different heads with reference to an Individual Assessee*.

UNIT-I: CAPITAL GAINS:

Introduction - Meaning – Scope of charge – Basis of charge – Short term and Long term Capital Assets – Transfer of Capital Asset – Deemed Transfer – Transfer not regarded as Transfer – Determination of Cost of Acquisition – Procedure for computation of Long-term and Short-term Capital Gains/Losses – Exemptions in respect of certain Capital Gains u/s. 54 – Problems on computation of capital gains.

UNIT–II: INCOME FROM OTHER SOURCES:

IGeneral Incomes u/s. 56(1) – Specific Incomes u/s. 56(2) – Dividends u/s. 2(22) – Interest on Securities – Gifts received by an Individual – Casual Income – Family Pension – Rent received on let out of Furniture- Plant and Machinery with/without Building – Deductions u/s. 57 - Problems on computation on Income from Other Sources.

UNIT-III: CLUBBING AND AGGREGATION OF INCOME:

Income of other persons included in the total income of Assessee – Income from Firm and AOP – Clubbing Provisions – Deemed Incomes – Provisions of set-off and Carry forward of losses – computation of Gross Total Income – Deduction from GTI u/s 80C to 80U – Computation of Taxable Income.

UNIT-IV: ASSESSMENT OF INDIVIDUALS:

Computation of Tax Liability – Applicability of Alternate Minimum Tax on Individual u/s 115JC – Computation of tax liability.

UNIT–V: ASSESSMENT PROCEDURE:

Income tax returns – Types of returns – Filling of e-return – Assessment – Types of assessment – Self assessment – Provisional assessment – Regular assessment – Best judgement assessment – Reassessment – Rectification of mistake – Notice on demand.

SUGGESTED READINGS:

Income Tax Law and Practice: V.P. Gaur & D.B- Narang, Kalyani Publishers.

Direct Taxes Law & Practice: Dr. Vinod K. Singhania & Dr. Kapil Singhania, Taxmann

Income Tax: B. Lal, Pearson Education.

Income Tax: M.Jeevarathinam & C. Vijay Vishnu Kumar, SCITECH Publications.

Taxation: R.G. Saha, Himalaya Publishing House Pvt. Ltd.

FINANCIAL INSTITUTIONS AND MARKETS

(For B.Com General Only)

Paper: BCO204 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3Hrs

Objective: *to familiarize with various Financial Institutions and Markets.*

UNIT–I: INTRODUCTION: Functions of Financial System – Constituents of Indian Financial System – An Overview of Indian Financial System – Role and Functions of Participants in the Financial Market – Factors.

UNIT–II: FINANCIAL INSTITUTIONS: ALL INDIA DEVELOPMENT BANKS:

Role of Financial Institutions in Economic Development – Types of Financial Institutions.

All India Development Banks: Industrial Finance Corporation of India (IFCI) – Industrial Development Bank of India (IDBI) – Industrial Investment Bank of India Limited (IIBIL) – Industrial Reconstruction Bank of India (IRBI) – Small Industries Development Bank of India (SIDBI) – Infrastructure Development Finance Company Limited (IDFC) – ICICI.

UNIT–III: FINANCIAL INSTITUTIONS: STATE LEVEL DEVELOPMENT BANKS:

State Finance Corporations (SFCs): Objectives and Scope - Management – Financial Resources – Functions – Operations – Performance Appraisal and Problems.

State Industrial Development Corporations (SIDCs): Functions – Resources – Operations – Financial Assistance.

UNIT–IV: MONEY MARKET: Money Market: Definition, Features, Objectives, Importance, Compositions. Call Money Market: Operations – Transactions and Participants – Advantages and Drawbacks. Commercial Bills Market: Definition – Types of Bills – Operations in Bill Market– Importance of Bill Market – Discount Market – Acceptance Market – Drawbacks.

Treasury - Types of Treasury Bills – Operations and Participants – Money Market Instruments – Structure of Indian Money Market – Recent Development in the Indian Money Market.

UNIT–V: CAPITAL MARKET: Capital Market: Meaning, Objectives, Importance, Functions – Structure of the Indian Capital Market – New Issue Market – Instruments – Security Buyer – Methods of Issus – Intermediaries

– Secondary Market – Characteristics and functions of Stock Exchanges – Listing of Securities – Types of Speculators - Stock Exchanges in India – SEBI – Powers and Functions – Primary and Secondary Market Guidelines .

SUGGESTED READINGS:

Financial Markets and Services: Gordon and Natarajan, Himalaya.

Financial Institutions & Markets: Shashi K Gupta, Nisha Aggarwal and Neeti Gupta, Kalyani

Management of Indian Financial Institutions: R.M.Srivastava&Divya Nigam, Himalaya.

Financial Services and Markets: Dr.Punithavathy Pandian, Vikas Publishing House Pvt. Ltd.

Indian Financial System: Dr. S C Bihari, International Book House Pvt. Ltd.

RELATIONAL DATABASE MANAGEMENT

Paper: BCH205 Max Marks: 60 T + 20 I + 20 P= 100

PPW: 5 (3T & 2P) Time: 3 Hrs.

Objectives: *to acquire the basic conceptual background necessary to design and develop simple database system, Relational database mode, ER model and distributed databases, and to write good queries using a standard query language called SQL.*

UNIT-I: BASIC CONCEPTS:

Database Management System - File based system - Advantages of DBMS over file based system - Database Approach - Logical DBMS Architecture - Three level architecture of DBMS or logical DBMS architecture - Need for three level architecture - Physical DBMS Architecture - Database Administrator (DBA) Functions & Role - Data files indices and Data Dictionary - Types of Database.

Relational and ER Models: Data Models - Relational Model – Domains - Tuple and Relation - Super keys - Candidate keys - Primary keys and foreign key for the Relations - Relational Constraints - Domain Constraint - Key Constraint - Integrity Constraint - Update Operations and Dealing with Constraint Violations - Relational Operations - Entity Relationship (ER) Model – Entities – Attributes – Relationships - More about Entities and Relationships - Defining Relationship for College Database - E-R Diagram - Conversion of E-R Diagram to Relational Database.

UNIT-II: DATABASE INTEGRITY AND NORMALISATION:

Relational Database Integrity - The Keys - Referential Integrity - Entity Integrity - Redundancy and Associated Problems – Single Valued Dependencies – Normalisation - Rules of Data Normalisation - The First Normal Form -The Second Normal Form - The Third Normal Form - Boyce Codd Normal Form - Attribute Preservation - Lossless-join Decomposition - Dependency Preservation.

File Organisation : Physical Database Design Issues - Storage of Database on Hard Disks - File Organisation and Its Types - Heap files (Unordered files) - Sequential File Organisation - Indexed (Indexed Sequential) File Organisation - Hashed File Organisation - Types of Indexes - Index and Tree Structure - Multi-key File Organisation - Need for Multiple Access Paths - Multi-list File Organisation - Inverted File Organisation.

UNIT-III: STRUCTURES QUERY LANGUAGE (SQL):

Meaning – SQL commands - Data Definition Language - Data Manipulation Language - Data Control Language - Transaction Control Language - Queries using Order by – Where - Group by - Nested Queries.

Joins – Views – Sequences - Indexes and Synonyms - Table Handling.

UNIT-IV : TRANSACTIONS AND CONCURRENCY MANAGEMENT:

Transactions - Concurrent Transactions - Locking Protocol - Serialisable Schedules - Locks Two Phase Locking (2PL) - Deadlock and its Prevention - Optimistic Concurrency Control.

Database Recovery and Security: Database Recovery meaning - Kinds of failures - Failure controlling methods - Database errors - Backup & Recovery Techniques - Security & Integrity - Database Security - Authorization.

UNIT-V: DISTRIBUTED AND CLIENT SERVER DATABASES:

Need for Distributed Database Systems - Structure of Distributed Database - Advantages and Disadvantages of DDBMS - Advantages of Data Distribution - Disadvantages of Data Distribution - Data Replication - Data Fragmentation.

Client Server Databases: Emergence of Client Server Architecture - Need for Client Server Computing - Structure of Client Server Systems & its advantages.

LAB: SQL QUERIES BASED ON VARIOUS COMMANDS.

SUGGESTED READINGS:

Database Systems: R.Elmasri & S.B. Navathe, Pearson.

Introduction to Database Management System: ISRD Group, McGraw Hill.

Database Management System: R.Ramakrishnan & J.Gehrke, McGraw Hill.

Modern Database Management: J.A.Hoffer,V.Rames&H.Topi, Pearson.

Database System Concepts: Silberschatz, Korth & Sudarshan, McGraw Hill.

Simplified Approach to DBMS: Parteek Bhaia, Kalyani Publishers.

Database Management System: Nirupma Pathak, Himalaya.

Database Management Systems: Pannerselvam, PHI.

Relational Database Management System: Srivastava & Srivastava, New Age

PHPMySQL Spoken Tutorials by IIT Bombay.

Oracle Database: A Beginner's Guide: I.Abramson, McGraw Hill.

SEMESTER- V

SKILL ENHANCEMEMNT COURSE III

Paper: (BC 501): PRACTICE OF GENERAL INSURANCE

Paper: BC501 Max. Marks: 40+10
PPW: 2 Hrs Exam Duration: 1½ hrs

Unit I: GENERAL INSURANCE POLICIES:

Introduction to General Insurance-Origin of general insurance—Classification of General Insurance Companies—Indian and International Insurance Market—various roles in Insurance industry—Policy Documents and forms—insurance proposals and forms—General Insurance Products-Fire, Marine, Motor, Liability, Personal Accident and Specialty Insurance, Engineering and other insurance.

Unit II: UNDERWRITING, PREMIUMS, CLAIMS AND INSURANCE RESERVES AND ACCOUNTING:

Concept of Underwriting—Underwriting Process—Risk sharing and its methods—risk management and steps involved in it—Rating and Premiums—concept of soft and hard markets—Concept of Claim-understanding the process of claim management—claims fraud and fraud prevention—Insurance reserves and accounting—different types of reserves of insurance companies—reserving process followed by insurance companies—Insurance accounting.

SUGGESTED READINGS:

1. Practice of General Insurance – Insurance Institute of India.
2. Practice of General Insurance – D.S. Vittal-HPH.
3. Principles & Practice of Insurance- Dr. P. Periasamy – HPH.
4. Risk Management: A Publication of the Insurance Institute of India.,
5. Practice of General Insurance: Dr. V. Padmavathi, Dr. V. Jayalakshmi, PBP.
6. Insurance Theory and Practice: Tripathi PHI
7. Life and Health Insurance: Black, JR KENNETH & Harold Skipper, Pearson
8. Risk Management and Insurance : Trieschman ,Gustavson and Hoyt
9. South Western College Publishing Cincinnati, Ohio

GENERIC ELECTIVE I

(COMMON FOR ALL FACULTTIES)

Paper: (BC 502): PUBLIC HEALTH AND HYGIENE

Paper: BC502 Max. Marks: 40+10
PPW: 2 Hrs Exam Duration: 1½ hrs

UNIT – I: NUTRITION AND ENVIRONMENT

Balanced Diet and Malnutrition.

Nutritional Deficiencies and Disorders- Carbohydrates, Proteins, Lipids, Vitamins and Minerals.

Occupational, Industrial, Agricultural and urban Health-Exposure at work place, urban areas, Industrial workers, Farmers and Agricultural labourers, Health workers and Health Disorders and Diseases.

Environmental Pollution and associated Health hazards, Water borne diseases and Air borne diseases.

UNIT-II: DISEASES AND HEALTH CARE

Causes, Symptoms, Diagnosis, Treatment and Prevention - Malaria, Filariasis, Measles, Polio, Chicken Pox, Rabies, Plague, Leprosy

Causes, Symptoms, Diagnosis, Treatment and Prevention of non-communicable diseases - Hypertension, Coronary Heart diseases, Stroke, Diabetes, Obesity and Mental ill-health.

Health care legislation in India – Termination of Pregnancy act, Maternity Benefit act, Bio-medical waste act, ESI Act.

First Aid and Health Awareness, Personal health care, Record maintenance.

COST ACCOUNTING

Paper: BCO503 Max Marks: 80 T + 20 I = 100

PPW: 5 Hrs Exam Duration: 3 Hrs

Objective: *to make the students acquire the knowledge of cost accounting methods.*

UNIT-I: INTRODUCTION:

Cost Accounting: Definition – Features – Objectives – Functions – Scope – Advantages and Limitations - Essentials of a good cost accounting system.

Difference between Cost Accounting and Financial Accounting – Cost concepts – Cost Classification. Preparation of cost sheet.(Including problems)

UNIT-II: MATERIAL:

Direct and Indirect Material cost – Inventory Control Techniques – Stock Levels – EOQ – ABC Analysis – Issue of Materials to Production – Pricing methods: FIFO, LIFO with Base Stock and Simple and Weighted Average methods. (Including problems)

UNIT-III: LABOUR AND OVERHEADS:

Labour: Direct and Indirect Labour Cost – Methods of Payment of Wages (only Incentive Plans): Halsey, Rowan, Taylor Piece Rate and Merrick Multiple Piece Rate Methods.

Overheads: Classification - Methods of Allocation - Apportionment and Absorption of overheads (Including problems)

UNIT-IV: UNIT AND JOB COSTING:

Unit Costing: Features - Cost Sheet – Tender and Estimated Cost Sheet.

Job Costing: Features - Objectives – Procedure - Preparation of Job Cost Sheet. (Including problems)

UNIT-V: CONTRACT AND PROCESS COSTING:

Contract Costing: Features – Advantages - Procedure of Contract Costing – Guidelines to Assess profit on Incomplete Contracts.

Process Costing: Meaning – Features – Preparation of Process Account – Normal and Abnormal Losses. (Including problems)

SUGGESTED READINGS:

1. Cost Accounting: Jain and Narang, Kalyani

2. Cost Accounting: M.N Arora, Himalaya

3. Cost and Management Accounting: Prashanta Athma, Himalaya

4. Cost Accounting: Jawaharlal, Tata Mcgraw Hill

5. Cost Accounting: Theory and Practice: Banerjee, PHI

BUSINESS LAW

Paper: BCO504 Max Marks: 80 T + 20 I = 100
PPW: 5 Hrs Exam Duration: 3Hrs

Objectives: *to make the students acquire the basic conceptual knowledge of different laws relating to Business.*

UNIT–I: INTRODUCTION: Development of Business Law - Development of Law in Independent India Contact Act 1872: Agreement and contract - Essentials of a valid contract - Types of contracts - Offer and acceptance - Essentials of valid offer and acceptance - Communication and revocation of offer and acceptance – Consideration definition - Essentials of valid consideration - Doctrine of "Stranger to a contract"- "No consideration- no contract" - Capacity to a contract - Minors agreements.

UNIT–II: CONTACT ACT 1872: Legality of Object And Consideration - Agreements Expressly Declared To Be Void - Wagering Agreements - Contingent Contracts.

Discharge of Contract: Modes of Discharge - Performance of Contracts - Breach of Contract - Remedies for Breach.

UNIT–III: SALE OF GOODS ACT 1930: Contract of Sale: Essentials Of Valid Sale - Sale And Agreement To Sell – Definition and Types Goods - Conditions and Warranties - Caveat Emptor - Exceptions - Transfer or Passing of Property: Time When Property Passes, Rules Of Transfer of Property, Transfer Of Ownership - Sale By Non - Owners and its Exceptions - Unpaid Seller - Rights of Unpaid Seller.

Consumer Protection Act 1986: Definitions of Consumer – Person – Goods - Service -Consumer Dispute - Unfair Trade Practice - Restrictive Trade Practice – Defect - Deficiency - Consumer Protection Councils - Consumer Dispute Redressal Agencies - District Forum - State Commission and National Commission - Procedure to Lodge a Complaint for Redressal – Appeals.

UNIT–IV: TRADE MARKS, PPATENTS, COPY RIGHTS & INTELLECTUAL PROPERTY RIGHTS: Trade Marks: Definition, Procedure for Registration of Trade Marks - Patents: Definition, Kinds of Patents, Transfer of the Patent Rights, Rights of the Patentee, Copy Rights: Definition, Essential Conditions for Copy Rights to be Protected, Rights of the Copyright Owner, Terms of Copy Right, Copy Rights Infringement - Other Intellectual Property Rights: Trade Secrets, Geographical Indications,

UNIT–V: INFORMATION TECHNOLOGY ACT & ENVIRONMENTAL PROTECTION ACT: Information Technology: Objectives - Digital Signature - Electronic Governance - Penalties and Adjudication.

Environmental Protection Act 1986: Object - Scope and Scheme of the Act – Definitions - General Powers of the Central Government – Prevention - Control and Abetment of Environmental Pollution – Offences and Penalties.

SUGGESTED READINGS:

Company Law: Kapoor, Sultan Chand and Co.
A Manual of Business Laws: S.N. Maheshwari & S.K. Maheshwari, Himalaya
Business Laws: KC Garg & RC Chawla , Kalyani Publishers.

BANKING THEORY PRACTICES

Paper: BCO505 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3Hrs

OBJECTIVE: to acquire the knowledge of the working of the Indian Banking system.

UNIT-I: INTRODUCTION:

Origin And Growth Of Banking In India - Kinds Of Banks - Unit VS Branch Banking - Functions Of Commercial Banks - Nationalization Of Commercial Banks In India - Emerging Trends In Commercial Banking In India.

UNIT-II: RESERVE BANK OF INDIA:

RBI Constitution - Organizational Structure – Management - Objects – Functions – Working - Performance Appraisal.

UNIT-III: CORPORATIVE BANKS:

District Co-Operative Central Banks - Land Development Banks - Regional Rural Banks -National Bank for Agriculture and Rural Development.

UNIT-IV: BANKERS AND CUSTOMER RELATIONSHIP:

Definition of Bankers and Customer - Relationship Between Banker and Customer - General and Special Features of Relationship - Openings of Accounts - Special Types of Customers Like Minors, Married Women, Partnership Firms, Companies, Clubs and other Non-Trading Institutions.

UNIT-V: NEGOTIABLE INSTRUMENT:

Descriptions and their Special Features - Duties and Responsibilities of Paying Banker and Collecting - Circumstances under which a Banker can Refuse Payment of Cheque - Consequences of Wrong Full Dishonors - Precautions to be taken while Advancing Loans Against Securities – Goods - Documents of Title to Goods - Loans against Real Estate -Insurance Policies - Against Collateral Securities – Banking Receipts.

Rule in Clayton's Case - Garnishee Order – Loans against Equitable Mortgage and Legal Mortgage and Distinction between them - Latest Trends in Deposit Mobilization.

SUGGESTED READINGS:

Banking Theory & Practices: Dr.P.K.Srivatsava, Himalaya Publishers

Banking Theory & Practices: K.E. Shekar, Vikas Publications

Banking Theory, Law & Practices: R.R PAUL, Kalyani Publishers

Money Banking and Financial Markets: Averbach, Rabort.D, MacMillan. Landon

Banking: N.T. Somashekar, New age international publishers

Fundamentals of International Banking: Rup Narayan Bose, Trinity publishers

Modern Commercial Banking: H.R. Machiraju, New age international publishers

COMPUTERISED ACCOUNTING

(For Both B.Com General & B.Com CA)

Paper: BCO506/ BCO508 Max Marks: 60 T + 20 I + 20 P= 100

PPW: 4 (3T & 2P) Exam Duration: 3 Hrs.

Objectives: to acquire basic knowledge in the computerised accounting systems and its applications in the area of business.

UNIT-I: COMPUTERIZED ACCOUNTING:

Introduction–Importance-Application -Advantages and disadvantages – Difference between Manual Accounting and Computerised Accounting – Features of Accounting packages – Creation of Company–Groups–Ledgers, Pre-defined vouchers - Displaying - Altering – Deleting of vouchers, ledger and company.- Reports: Account Books – Registers - Statement of Accounts - Bank Reconciliation Statement - Day Book – Cash and Bank Books- Final Accounts of Sole Traders: Trail Balance - Profit and Loss Account - Balance Sheet.

UNIT-II: ACCOUNTS WITH INVENTORY:

Creation of Company with inventory and stock – Creation of Groups - Stock categories - Stock items – Godowns - Units of Measure - Inventory Vouchers - Pure Inventory Vouchers - Creating purchase order & Sales order – Invoicing - Display of inventory reports & statements.

UNIT-III: FINAL ACCOUNTS OF BUSINESS ORGANISATIONS:

Preparation of Final Accounts for Nonprofit organizations-Partnership firms - Corporate companies - Bank Accounts.

UNIT-IV: COST AND MANAGEMENT ACCOUNTING:

Preparation of Stores Legers – Job costing - Common size statement - Funds Flow Statement - Cash Flow Statement-Ratio Analysis

UNIT-V: TAX ACCOUNTING: GOODS AND SERVICES TAX (GST)

Introduction to GST - Features of GST - Objectives of GST - Structure of GST - GST- Tax Rates - Registration of GST - GST Return Forms - GST Activation in Tally - Computation of GST in Tally - GST-Reports in Tally - GST Returns Filing, Generating Challans and Making Tax Payment.

SUGGESTED READINGS:

Computerised Accounting: A.Murali Krishna, Vaagdevi publications

Computerised Accounting using Tally (with GST) by M.Yadagiri and G. Srinivas, Kalyani Publishers.

Aakash Business Tools: Spoken Tutorial Project IIT Bombay

Mastering Tally: Dinesh Maidasani, Firewal Media

Implementing Tally ERP 9: A.K Nadhani and K.K Nadhani, BPB Publications

FINANCIAL INSTITUTIONS AND MARKETS

(For B.Com CA Only)

Paper: BCO506 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3Hrs

Objective: to familiarize with various Financial Institutions and Markets.

UNIT–I: INTRODUCTION: Functions of Financial System – Constituents of Indian Financial System – An Overview of Indian Financial System – Role and Functions of Participants in the Financial Market – Factors.

UNIT–II: FINANCIAL INSTITUTIONS: ALL INDIA DEVELOPMENT BANKS:

Role of Financial Institutions in Economic Development – Types of Financial Institutions.

All India Development Banks: Industrial Finance Corporation of India (IFCI) – Industrial Development Bank of India (IDBI) – Industrial Investment Bank of India Limited (IIBIL) – Industrial Reconstruction Bank of India (IRBI) – Small Industries Development Bank of India (SIDBI) – Infrastructure Development Finance Company Limited (IDFC) – ICICI.

UNIT–III: FINANCIAL INSTITUTIONS: STATE LEVEL DEVELOPMENT BANKS:

State Finance Corporations (SFCs): Objectives and Scope - Management – Financial Resources – Functions – Operations – Performance Appraisal and Problems.

State Industrial Development Corporations (SIDCs): Functions – Resources – Operations – Financial Assistance.

UNIT–IV: MONEY MARKET: Money Market: Definition, Features, Objectives, Importance, Compositions.

Call Money Market: Operations – Transactions and Participants – Advantages and Drawbacks. Commercial Bills Market: Definition – Types of Bills – Operations in Bill Market– Importance of Bill Market – Discount Market – Acceptance Market – Drawbacks.

Treasury - Types of Treasury Bills – Operations and Participants – Money Market Instruments – Structure of Indian Money Market – Recent Development in the Indian Money Market.

UNIT–V: CAPITAL MARKET: Capital Market: Meaning, Objectives, Importance, Functions – Structure of the Indian Capital Market – New Issue Market – Instruments – Security Buyer – Methods of Issus – Intermediaries

– Secondary Market – Characteristics and functions of Stock Exchanges – Listing of Securities – Types of Speculators - Stock Exchanges in India – SEBI – Powers and Functions – Primary and Secondary Market Guidelines .

SUGGESTED READINGS:

Financial Markets and Services: Gordon and Natarajan, Himalaya.
Financial Institutions & Markets: Shashi K Gupta, Nisha Aggarwal and Neeti Gupta, Kalyani
Management of Indian Financial Institutions: R.M.Srivastava&Divya Nigam, Himalaya.

FINANCIAL MANAGEMENT Spl-1

(For B.Com General Only)

Paper: BCO/F/507 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3hrs

Objective: to understand the basics in financial management.

UNIT–I: INTRODUCTION:

Financial Management: Meaning, Nature and Scope, Importance, Objectives - Profit Maximization vs Wealth Maximization – Traditional Functions of Finance Manager – Changing Role of Finance Manager – Relationship between Financial Management and Other Management Areas (Theory).

UNIT–II: FINANCIAL PLANNING:

Sources of Finance - Financial Planning: Meaning and Definition, Objectives, Characteristics, Process, Factors, Limitations (Theory).

UNIT–III: CAPITALIZATION:

Meaning of Capital and Capitalization – Sources of Capital - Theories of Capitalization – Over Capitalization: Meaning, Causes, Consequences, Remedies - Under Capitalization: Meaning, Causes, Consequences, Remedies - Comparison of Under and Over Capitalization – Watered Stock (Theory).

UNIT–IV: COST OF CAPITAL:

Meaning and Definition – Significance – Classification of Costs – Problems in Determination of Cost of Capital – Computation: Cost of Debt, Cost of Perpetual and Redeemable Debt, Cost of Preference Capital, Cost of Equity Capital, Weighted Average Cost of Capital (Simple Problems).

UNIT–V: CAPITAL STRUCTURE:

Meaning – Importance – Factors – Types – Optimal Capital Structure – Theories of Capital Structure: Net Income Approach, Net Operating Income Approach, Traditional Approach, Modigliani and Miller Approach (Simple Problems).

SUGGESTED READINGS:

Financial Management: I M Pandey, Vikas Publishing House Pvt Ltd.

Financial Management: M.Y. Khan & P.K. Jain, Tata McGraw-Hill

Financial Management: Shashi K. Gupta & R.K. Sharma, Kalyani Publishers,

Financial Management: R.M. Srivastava, Himalaya Publishing House, Hyderabad.

Financial Management: Prasanna Chandra , McGraw Hill

Financial Management: Rustagi, Taxman Publications.

Fundamentals of Financial Management: Sharan, Pearson.

PRINCIPLES OF MARKETING Spl-2

(For B.Com General Only)

Paper: BCO/E508 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3hrs

Objective: to expose to the basics of marketing management as a functional area and to understand the various decisions under this discipline.

UNIT-I: INTRODUCTION:

Meaning and Definition of Marketing – Scope – Evolution of Marketing Concept - Production concept - Product concept - Marketing Myopia – Selling Concept - Marketing Concept - Societal Marketing Concept - Objectives - Role of Marketing in Economic Development - Marketing Mix - Direct Marketing - Online Marketing Challenges and Opportunities - Marketing of Services.

UNIT-II: MARKETING ENVIRONMENT:

Micro Environment (Company – Suppliers - Marketing Intermediaries – Customers – Competitors - Publics) - Macro Environment (Demographic – Economic – Natural – Technological – Political - Legal (Consumer Protection Act 1986) and Regulatory cultural - Social - International Marketing GATT & WTO.

UNIT-III: MARKETING SEGMENTATION:

Concept of Target Market - Diffused Market - Concentrated Market - Clustered Market - Market Segmentation: Concept, Bases, Benefits, Requirement for Effective Segmentation, Market Segmentation Analysis for Consumer and Services - Product Positioning: Concepts, Bases.

UNIT-IV: CONSUMER BEHAVIOUR:

Consumer Behavior: Nature, Scope, Importance, Factors: Economic, psychological, Cultural, Social and Personal - Steps in consumer Decision Process -Post Purchase Behavior - Cognitive Dissonance - Organizational Buyer - Industrial Markets - Reseller Market - Government Market - Characteristics of Organizational Buyer - Organizational Buying Process - Organizational Buyer Vs. Consumer Behavior.

UNIT-V: MARKET RESEARCH & ETHICAL DILEMMAS IN MARKETING:

Market Research: Meaning and Definition - Marketing Research Process: Defining the Objectives of Research, Need, Designing the Research Project, Data Collection Process, Analyzing Data, Presenting Results - Scope of Marketing Ethics - Ethical issues Associated with Marketing Decisions Creating an Ethical climate in work place - Influence of personal Ethics.

SUGGESTED READINGS:

Principles of Marketing: Philip Kotler, Pearson.

Marketing Management: Philip Kotler, Kevinlane Keller, Abraham Koshy, and Pearson.

Marketing.Dhruv Grewal: Michael levy, Tata McGraw Hill.

OBJECT ORIENTED PROGRAMMING IN C++

(For B.Com CA only)

Paper: BCC507 Max Marks: 60 T + 20 I + 20 P= 100

PPW: 4 (3T+2P) Exam Duration: 3 Hrs.

Objectives: to gain the skills of Object Oriented Programming using C++ Language.

UNIT-I: INTRODUCTION TO OBJECT ORIENTED PROGRAMMING AND C++:

Object Oriented Programming: Concepts – Benefits – Languages - Structured vs. Object Oriented Programming.

C++: Genesis - Structure of a program – Tokens - Data Types – Operators - Control Structures - C vs C++ - Functions.

UNIT-II: CLASSES, OBJECTS, CONSTRUCTORS AND DESTRUCTORS:

Encapsulation - Hiding - Abstract data types - Object & Classes – Attributes - Methods - C++ class declaration - State identity and behaviour of an object.

Purpose of Constructors - Default Constructor - Parameterized Constructors - Copy Constructor - Instantiation of objects - Default parameter value - Object types - C++ garbage collection - Dynamic memory allocation – Meta class / Abstract classes.

UNIT-III: OVERLOADING, CONVERSIONS, DERIVED CLASSES AND INHERITANCE:

Function and Operator Overloading - Overloading Unary and Binary Operators - Data and Type Conversions -Derived Classes - Concept of Reusability - Visibility modes - Types of Inheritance - Single and Multiple Inheritance - Multilevel Inheritance.

UNIT-IV: POLYMORPHISM, VIRTUAL FUNCTION, STREAMS AND FILES:

Polymorphism - Virtual - Classes - Pointer to Derived class - Virtual functions - Rules for Virtual function - Pure Virtual functions - Stream Classes - Types of I/O - Formatting Outputs - File Pointers – Buffer -C++ Stream - Unformatted console I/O operations – Functions: get( ) - put( ) – formatted console I /O operations - IOS class format functions - Manipulators.

UNIT–V: EXCEPTION HANDLING AND DATA STRUCTURES IN C++:

Exceptions in C++ Programs - Try and Catch Expressions - Exceptions with arguments.

Data Structures: Introduction - Linked list - Stacks - Queues.

SUGGESTED READINGS:

Objected Oriented Programming with C++: E.Balagurusamy, McGraw Hill.

C++ Programming-A Practical Approach: Madhusudan Mothe, Pearson.

Object Oriented Programming Using C++: Chadha & Chadha, Kalyani.

Programming in C++: A.N.Kamthane, Pearson.

SEMESTER- VI

SKILL ENHANCEMEMNT COURSE IV

BCO 601: REGULATIONS OF INSURANCE BUSINESS

Paper: BC601 Max. Marks: 40+10
PPW: 2 Hrs Exam Duration: 1½ hrs

Objective: To equip the students with the knowledge regarding Insurance Business Regulations

UNIT I: INSURANCE LEGISLATION IN INDIA:

History of life and non-life insurance legislation—nationalization—insurance reforms—insurance business Act, 1972—IRDA and its functions including licensing functions—Web aggregators—regulation for intermediaries—CCS-SPV-PoS-insurance repositories-TPAs—Role and duties of surveyors—Origin and development of micro-insurance—regulation of ULIPs—pension schemes—money laundering—KYC—methods of receipt of premium—Exchange control regulations relating to General and Life Insurance—IRDA Health Insurance Regulations, 2016—Health plus life combi products.

UNIT II: POLICY HOLDERS RIGHTS OF ASSAINGMENT, NOMINATION AND TRANSFER:

Assignment and transfer of insurance policies—provisions related to nomination—repudiation—Fraud—protection of policyholder interest—stages in insurance policy-presale stage-post sale stage-free look period—grievance redressal—claim settlement—key feature document—dispute resolution mechanism—insurance ombudsman—solvency margin and investments— international trends in insurance regulation.

SUGGESTED READINGS :

1. Regulation of Insurance Business – Insurance Institute of India
2. Regulation of Insurance Business – D.S. Vittal, HPH
3. Regulation of Insurance Business: Dr. V. Padmavathi, PBP
4. Risk Management : A Publication of the Insurance Institute of India
5. Insurance Theory and Practice: Tripathi PHI
6. Life and Health Insurance: Black, JR KENNETH & Harold Skipper, Pearson
7. Risk Management and Insurance : Trieschman ,Gustavson and Hoyt
8. South Western College Publishing Cincinnati, Ohio.
9. Insurance Management – S.C. Sahoo & S.C. Das-HPH.

GENERIC ELECTIVE II

(COMMON FOR ALL FACULTIES)

BCO 602: **WATER RESOURCES MANAGEMENT**

Paper: BC602 Max. Marks: 40+10
PPW: 2 Hrs Exam Duration: 1½ hrs

UNIT-I

Importance of Natural Resources – Different Types and Resources

Significance of Water Resources and their uses

Conservation of water and recycling of the water – Global distribution of water

Water shed programmes and their management

Storing the rain water in tanks and recharging ground water

Unit-II

Rain water harvesting in rural areas (*chekdam, trenches* etc.,)

Overuse of surface and ground water and control measures.

Aims, objectives and implementation of *Mission Bhagiratha* (Telangana Government Drinking water programme)

Aims, objectives and implementation of *Mission Kakatiya* (Telangana Government minor irrigation programme)

Issues and challenges in Water Resources Management

MANAGERIAL ACCOUNTING

Paper: BCO603 Max Marks: 80 T + 20 I = 100

PPW: 5 Hrs Exam Duration: 3 Hrs

Objective: to acquire the knowledge of managerial accounting decision making techniques, preparation of budgets and estimation of working capital.

UNIT-I: INTRODUCTION:

Managerial Accounting: Features – Objectives – Scope – Functions – Advantages and Limitations – Relationship between Cost, Management and Financial Accounting.

UNIT-II: MARGINAL COSTING:

Meaning – Importance – Marginal Cost Equation – Difference between Marginal Costing and Absorption Costing – Application of Marginal Costing – CVP Analysis – Break Even Analysis: Meaning, Assumptions, Importance.

UNIT-III: ALTERNATIVE CHOICES OF DECISION MAKING:

Decision making - Make or Buy decision – Add or Drop products – Sell or Process further – Operate or Shut-down – Special Order Pricing – Replace or Retain.

UNIT-IV: BUDGETS AND BUDGETARY CONTROL:

Meaning – Objectives – Advantages and Limitations – Essentials of Budgets and Budgetary Control – Classification of Budgets (Problems on Flexible and Cash Budgets).

UNIT-V: WORKING CAPITAL:

Meaning - Concept – Classification – Importance – Objectives – Methods of Forecast/Estimate of Working Capital Requirements.

SUGGESTED READINGS:

1. Introduction to Management Accounting: Charles T, Horngren et al, Pearson

2. Management Accounting: S.P.Gupta

3. Management Accounting: Manmohan & Goyal

4. Management Accounting: Sharma Shashi K. Gupta, Kalyani Publishers

5. Management Accounting: MN Arora, Himalaya

6. Mgt. Accounting: Khan & Jain, Tata McGraw Hill

7. Accounting for Management: SN Maheshwari, Vikas.

COMPANY LAW

Paper: BCO604 Max Marks: 80 T + 20 I = 100

PPW: 5 Hrs Exam Duration: 3Hrs

Objectives: *to understand the legal provisions applicable for establishment- management and winding up of companies in India.*

UNIT-I: FORMATION AND INCORPORATION OF COMPANIES:

Company: Meaning and Definition, Characteristics, Classification – Legislation on Companies – Incorporation - Promotion – Registration - Memorandum of Association – Articles of Association – Certificate of Incorporation - Prospectors – Statement in lieu of prospectors – Certificate of commencement of business – Commencement of business.

UNIT–II: MANAGEMENT:

Director Qualification - Disqualifications - Position - Appointment - Removal – Duties and Liabilities of Directories – Loans to directors – Remuneration of Directors – Managing Director – Corporate Social Responsibility – Corporate Governance.

UNIT–III: COMPANY SECRETARY:

Definition of Company Secretary – Appointment of whole time Company Secretary – Duties of Company Secretary – Liabilities of Company Secretary – Company Secretary in practice – Secretarial Audit.

UNIT–IV: COMPANY MEETINGS:

Meaning of Meeting – Requisites of a valid meeting - Notice – Proxy - Agenda – Quorum – Resolutions – Minutes – Kinds – Shareholder Meetings - Statutory Meeting - Annual General Body Meeting – Extraordinary General Meeting – Board Meetings.

UNIT–V: WINDING UP:

Meaning – Modes of Winding Up – Winding Up by tribunal – Voluntary Winding Up – Compulsory Winding Up – Consequences of Winding Up – Removal of name of the company from Registrar of Companies.

SUGGESTED READINGS:

Company Law: ND Kapoor, Sultan Chand and Co.

Company Law and Practice: GK Kapoor & Sanjay Dhamija, Taxmann Publication.

Company Law: Revised as per Companies Act- 2013: KC Garg et al, Kalyani Publication.

Corporate Law: PPS Gogna, S Chand.

Company Law: Bagrial AK: Vikas Publishing House.

AUDITING

(For B.Com CA only)

Paper: BCO605 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3Hrs

Objectives: *to understand the meaning and elements of auditing and gain the knowledge of execution of audit.*

UNIT-I: INTRODUCTION:

Auditing: Meaning – Definition – Evolution – Objectives – Importance - Types of Audit – Standards of Auditing – Procedure for issue of standards by AASB.

UNIT–II: AUDITOR AND EXECUTION OF AUDIT:

Appointment – Qualification and Disqualification – Qualities – Remuneration – Removal – Rights – Duties – Civil and Criminal Liabilities of Auditors – Commencement of Audit –Engagement Letter – Audit Program – Audit Note Book – Audit Workbook – Audit Markings.

UNIT–III: INTERNAL CONTROL, INTERNAL CHECK AND INTERNAL AUDIT:

Meaning and Objectives of Internal Control – Internal Check and Internal Audit – Internal Check Vs. Internal Audit – Internal Control vs. Internal Audit.

UNIT–IV: VOUCHING:

Meaning – Objectives – Types of Vouchers – Vouching of Trading Transactions – Vouching Cash Transaction – Auditing in an EDP Environment.

UNIT–V: VERIFICATION AND VALUATION OF ASSETS:

Meaning and Definition – Distinction – Verification and Valuation of various Assets and Liabilities – Audit Committee – Role of Audit Committee – Audit Report.

SUGGESTED READINGS:

Principles and Practice of Auditing: RG Saxena, Himalaya Publishing House.

Auditing and Assurance for CA Integrated Professional Competence: SK Basu, Pearson.

Auditing: Aruna Jha, Taxmann Publications.

Auditing Principles, Practices & Problems: Jagdish Prakash, Kalyani Publishers.

Auditing and Assurance: Ainapure & Ainapure, PHI Learning.

COMMERCE LAB

(For Both BCom General & CA)

Paper: BCO606 Max. Marks: 35PF + 15VV

PPW: 4 Exam Duration: Nil

Objective: to become familiar with various business documents and acquire practical knowledge, which improve over all skill and talent.

UNIT-I: BASIC BUSINESS DOCUMENTS: Trade license under Shops and Establishments Act - Labor license from Department of labor - Partnership Deed - Pollution, Health licenses – Quotation - Invoice form and preparation - Computation of simple interest, compound interest and EMI - Way bill used during transport - Debit Note and Credit Note - Audit Report.

UNIT-II: FINANCE, BANKING AND INSURANCE DOCUMENTS: Promissory Note - Bill of exchange – Cheque - Pay in slip - Withdrawal form - Account opening and Nomination form - Deposit form and Deposit Receipts - Loan application form - Insurance Proposal form and Insurance Policy - ATM Card Application form - Credit appraisal report - Insurance agency application procedure - ESI / PF membership form.

UNIT-III: BUSINESS LEGAL DOCUMENTS: Memorandum of Association - Articles of Association - Certificate of Incorporation – Prospectus - Certificate of Commencement of Business - Annual Report – Chairman's Speech - Model bye-laws of some society - Society/ Trust registration form - Complaint in a Consumer forum - Complaint under Right to Information Act.

UNIT-IV: DOCUMENTS OF TAXATION:PAN application under Income Tax Act - TAN application under Income Tax Act - Form:16 to be issued by Employer - TDS and its certificate u/s15 - Income Tax payment challans and Refund Order - Income Tax Returns including TDS Return - Notices under Income Tax Act - Assessment Order - VAT/TOT Dealer-Application and License - Registration under Service Tax.

UNIT-V: BUSINESS CHARTS: Elements of business - Forms of business organizations - Procedure of incorporation of companies - Classification of partners with salient features of each of them - International, National, State level and Regional entrepreneurs - Hierarchy of Banking business in India - Tax administration in India - Various taxes imposed in India - Export and import procedure - Purpose and powers of authorities like RBI, SEBI, IRDA, ROC.

COMMERCE LAB FACILITIES:

i) Colleges are required to provide a commerce lab containing all the documents related to commerce and facilities as, computer, printer, OHP, LCD Projector with sufficient furniture.

ii) Teachers should practically explain the documents and help in filling the same in the simulated environment.

iii) Students are required to do the above personally and gain the knowledge of filling the above documents and the same are to be kept in a portfolio.

iv) At the end of semester, the portfolios would be evaluated by the external examiner designated by the Controller of Examinations, Osmania University, from the panel submitted by the Board of Studies in Commerce. The Examiner would evaluate the portfolio for a maximum of 35 marks and conduct viva-voce examination for 15 marks. The award lists duly signed are to be sent the Controller of Examinations, OU.

HUMAN RESOURCE MANAGEMENT

(B.Com General only)

Paper: BCO/E607 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3Hrs

Objective: *to gain knowledge of the basics of Human Resource Management*.

UNIT- I: INTRODUCTION:

HRM: Meaning - Importance - Objectives - Evolution - Elton Mayo's Human Relations Theory.

HRM in India: Introduction - Human Relation Movement - Scope of HR in India – Recent trends in HR in India – Call centers and BPOs.

UNIT-II: HR PLANNING:

Introduction - Need for HR Planning - Process of HR Planning - HR Planning system - Responsibility of HR Planning.

UNIT-III: PROCUREMENT OF HUMAN RESOURCES:

Introduction - Concept of Recruitment - Factors affecting Recruitment - Sources of Recruitment - Traditional and Modern methods - Recruitment and Selection Policies - Recruitment Practices in India - Both in Private and Public Sector - Concept of Selection – Selection Techniques.

UNIT-IV: HUMAN RESOURCE DEVELOPMENT:

Training & Development: Introduction - Meaning of training - Importance of training - Training Needs Identification - Types and Techniques of Training - Need and Importance of Management Development - Training Evaluation.

UNIT-V: EMPLOYEE PERFORMANCE APPRAISAL:

Concept and Need of employee review - Concept of Employee Appraisal - Types of Appraisal Method – Individual Evaluation Methods - Multiple Person Evaluation Methods - 360 Degree Appraisal - MBO.

SUGGESTED READING:

Essentials of Human Resource Management and Industrial Relations: P.Subba Rao, Himalaya.

Human resource Management: Text & Cases: K.Aswathappa, MC Grawhill Foundation

HRM with case study: Shashi K. Gupta, Rosy Joshi, Kalyani Publishers.

Personal Management: C. B. Mamoria, Himalaya Publishing House.

Human resource Management: S.S.Khanka, S. Chand

Human resource Management: Seema Sanghil, Vikas Publications

Fundamentals of Human Resource Management: Gary Dessler, Biju Varkkey, Pearson

TAX PLANNING & MANAGEMENT

(B.Com General only)

Paper: BCO/E608 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3Hrs

Objective:*to equip with the conceptual and legal knowledge about Tax planning and Management with reference to various Heads of Income relating to an Individual Assessee.*

UNIT–I: INTRODUCTION TO TAX PLANNING: Meaning of Tax Planning – Tax Avoidance – Tax Evasion – Scope of Tax Planning – Methods of Tax Planning – Tax Management: Meaning – Scope of Tax Management: Under the various heads of Salaries, House Property, Profits and Gains of Business or Profession, Capital Gains.

UNIT–II: TAX PLANNING FOR SALARIES & INCOME FROM HOUSE PROPERTY:

Salaries: Advance of Salary – Commutation of Pension – Change of employment before 5 years service under Recognised Provident Fund – Conversion of unrecognised fund into recognised fund – Tax incidence of Perquisite/allowance – Leave travel concession vs. Leave travel allowance – Gratuity –Savings and Investments – D.A. or D.P. be paid as part of salary – Salary earned outside India – Relief under sec.89 – Repayment of Interest on Educational Loan – Contribution under Pension Scheme – Medical Expenditure.

House Property: Concessional treatment with respect to one self-occupied house – Availing self-occupancy concession for more than one house – Acquisition of house out of own capital vs. Borrowed capital – Acquisition of Self-occupied House out of Borrowed Capital – Deduction of Municipal taxes on Payment basis – Purchasing of House Property in the Name of Spouse having no Income or Negligible Income – Choosing the Best option where more than one House is under Self-occupancy.

UNIT–III: TAX PLANNING FOR PROFIT AND GAINS OF BUSINESS OR PROFESSION AND CAPITAL GAINS: Business: Business Premises - Own or Lease – Depreciation – Expenditure on Scientific Research – Amortisation of certain preliminary expenses – Expenditure on Advertisement – Investment in capital assets – Compensation for breach of an agreement relating to the purchase of an asset – Expenses on borrowing – Tax audit – Compulsory maintenance of accounts – Payment exceeding Rs. 20,000 to be made by Account Payee Cheque.

Capital Gains: Consideration to be realised before transfer – Transfer of capital asset at a suitable time – Fair Market Value as on 1st April- 1981 to be opted as the cost of acquisition – Concessional Rate of tax – Specific exemption – Forfeiture of exemption – Choice of investment – Sale timings of an asset- held by a minor child – Avoidance of capital gain on the sale of depreciable asset.

UNIT-IV: TAX PLANNING FOR NEW INDUSTRIAL ESTABLISHMENTS AND INVESTMENTS: Tax planning with reference to New Industrial Establishment – Location - Form - Nature and Capital Structure - Short term loans - Term loans - Public Deposits - Bonus Issues – Dividend.

UNIT-V: TAX PLANNING FOR MANAGERIAL DECISIONS: Tax considerations arising with regard to specific management decisions: Make/buy, Own/lease, Installment/hire purchase, Retain/replace, Export/local sale, Shut Down/continue Expand/ Contract, Merger and Amalgamations.

SUGGESTED READINGS: Corporate Tax Planning & Business Tax Procedures: Vinod K. Singania & Monica Singhania, Taxmann.

E- COMMERCE Spl-1

(For B.Com CA only)

Paper: BCC/E607 Max Marks: 80 T + 20 I = 100

PPW: 4 (3T+2P) Hrs Exam Duration: 3hrs

OBJECTIVE: *to acquire conceptual and application knowledge of ecommerce.*

UNIT-I: INTRODUCTION:E-Commerce: Meaning, Advantages & Limitations - E-Business: Traditional & Contemporary Model, Impact of E-Commerce on Business Models - Classification Of E-Commerce: B2B, B2C, C2B, C2C, B2E - Applications of Ecommerce: E-Commerce Organization Applications - E-Marketing - E-Advertising - E-Banking - Mobile Commerce - E-Trading - E-Learning - E-Shopping.

UNIT-II: FRAMEWORK OF E-COMMERCE: Framework Of E-Commerce: Application Services - Interface Layers - Secure Messaging - Middleware Services and Network Infrastructure - Site Security - Firewalls & Network Security - TCP/IP – HTTP - Secured HTTP – SMTP - SSL.

Data Encryption: Cryptography – Encryption – Decryption - Public Key - Private Key - Digital Signatures - Digital Certificates.

UNIT-III: CONSUMER ORIENTED E-COMMERCE APPLICATIONS: Introduction - Mercantile Process Model: Consumers Perspective and Merchant's Perspective - Electronic Payment Systems: Legal Issues & Digital Currency - E-Cash & E-Cheque - Electronic Fund Transfer (EFT) - Advantages and Risks - Digital Token-Based E-Payment System - Smart Cards.

UNIT-IV: ELECTRONIC DATA INTERCHANGE: Introduction - EDI Standards - Types of EDI - EDI Applications in Business – Legal - Security and Privacy issues if EDI - EDI and E-Commerce - EDI Software Implementation.

UNIT-V: E-MARKETING TECHNIQUES: Introduction - New Age of Information - Based Marketing - Influence on Marketing - Search Engines & Directory Services - Charting the On-Line Marketing Process - Chain Letters - Applications of 5P's (Product, Price, Place, Promotion, People) E-Advertisement - Virtual Reality & Consumer Experience - Role of Digital Marketing.

Lab work: Using Microsoft Front Page Editor and HTML in Designing a Static Webpage/Website.

SUGGESTED READINGS:

Frontiers of Electronic Commerce: Ravi Kalakota, Andrew B Whinston, Pearson
E-Commerce:An Indian Perspective: P.T. Joseph, S.J, Phi
Electronic Commerce, Framework Technologies&Applications: Bharat Bhasker, McgrawHill
Introduction To E-Commerce: Jeffrey F Rayport, Bernard J. Jaworski: Tata Mcgraw Hill
Electronic Commerce, A Managers' Guide: Ravi Kalakota, Andrew B Whinston
E-Commerce & Computerized Accounting: Rajinder Singh, Er. Kaisar Rasheed, Kalyani
E-Commerce & Mobile Commerce Technologies: Pandey, Saurabh Shukla, S. Chand
E-Business 2.0, Roadmap For Success: Ravi Kalakota, Marcia Robinson, Pearson
Electronic Commerce: Pete Loshin / John Vacca, Firewall Media
E-Commerce, Strategy, Technologies And Applications : David Whiteley, Tata Mcgraw Hill
Digital Commerce and Its Applications (Student's Handbook): K Goyal, Kalyani Publication

MANAGEMENT INFORMATION SYSTEM

(For B.Com CA only)

Paper: BCO 608 Max Marks: 80 T + 20 I = 100

PPW: 4 Hrs Exam Duration: 3hrs

UNIT-I: AN OVERVIEW OF MANAGEMENT INFORMATION SYSTEMS (MIS):

Concept & Definition of MIS - MIS Vs. Data Processing - MIS & Decision Support Systems - MIS & Information Resources Management - End User Computing – MIS Structure - Managerial View of IS – Functions of Management - Management Role - Levels of Management.

UNIT-II: FOUNDATION OF INFORMATION SYSTEMS:

Introduction to Information System in Business - Fundamentals of Information Systems - Solving Business Problems with Information Systems - Types of Information Systems, Effectiveness and Efficiency Criteria in Information System - Frame Work For IS - Sequence of Development of IS.

UNIT-III: CONCEPT OF PLANNING & CONTROL:

Concept of Organizational Planning - Planning Process - Computational Support for Planning - Characteristics of Control Process - Nature of Control in an Organization.

IS Planning – Determination of Information Requirements - Business Systems Planning - End Means Analysis - Organizing the Plan.

UNIT-IV: BUSINESS APPLICATIONS OF INFORMATION TECHNOLOGY:

Internet & Electronic Commerce – Intranet - Extranet & Enterprise Solutions - Information System for Business Operations - Information System for Managerial Decision Support - Information System for Strategic Advantage.

UNIT-V: ADVANCED CONCEPTS IN INFORMATION SYSTEMS:

Enterprise Resource Planning - Supply Chain Management - Customer Relationship Management and Procurement Management - Systems Analysis and Design – System Development Life Cycle – Prototyping – Sad - Project Management - Cost Benefit Analysis - Detailed Design - Implementation.

SUGGESTED READINGS:

1. Management Information System: O Brian, TMH.
2. Management Information System: Gordon B.Davis & Margrethe H.Olson, TMH.
3. Information System for Modern Management: Murdick, PHI.
4. Management Information System: Jawadekar, TMH.

PARTICULARS OF FOUNDATION PAPERS, SKILL ENHANCEMENT COURCES (SEC) & GENERIC ELECTIVES (GE)

GOVERNMENT DEGREE COLLEGE - PEDDAPALLI									
(Affiliated to Satavahana University)									
2018-19									
Sl. No	**Semester**	**Course**	**PAPERS**		**MARKS**			**TOTAL**	**CREDITS**
			SEC	**GE**	**INT.**	**UNIV.**	**PRACT.**		
1	I	**BA**	ENVIRONMENTAL STUDIES	**NA (NOT APPLICABLE)**	10	40 (1/2 Hrs)	**NA**	50	2
		B.Com							
		B.Sc							
2	II	**BA**	GENDER SENSATISATION	**NA**	10	40 (1/2 Hrs)	**NA**	50	2
		B.Com							
		B.Sc							
3	III	**BA**	COMMUNICATION SKILLS IN ENGLISH	**NA**	10	40 (1/2 Hrs)	**NA**	50	2
		B.Com							
		B.Sc							
4	IV	**BA**	BASIC COMPUTER SKILLS	**NA**	10	40 (1/2 Hrs)	**NA**	50	2
		B.Com							
		B.Sc							
5	V	**BA**	VERBAL REASONING FOR A.T	PUBLIC HEALTH & HYGINENE	10	40 (1/2 Hrs)	**NA**	50	2
		B.Sc							
		B.Com	PRACTICE OF GENERAL INSURANCE		10	40 (1/2 Hrs)	**NA**	50	2
6	VI	**BA**	SOFT SKILLS	WATER RESOURCE MANAGEMENT	10	40 (1/2 Hrs)	**NA**	50	2
		B.Sc	**QUANTI.APPTITUED TEST,**		10	40 (1/2 Hrs)	**NA**	50	2
		B.Com	**REGULATION OF INS.BUSINESS,**		10	40 (1/2 Hrs)	**NA**	50	2

ENVIRONMENTAL STUDIES

UNIT - I : ECOSYSTEM, BIODIVERSITY & NATURAL RESOURCES : (15 hrs.)

1. Definition, Scope & Importance of Environmental Studies.
2. Structure of Ecosystem – Abiotic & Biotic components Producers, Consumers, Decomposers, Food chains, Food webs, Ecological pyramids)
3. Function of an Ecosystem :Energy flow in the Ecosystem (Single channel energy flow model)
4. Definition of Biodiversity , Genetic, Species & Ecosystem diversity , Hot-spots of Biodiversity, Threats to Biodiversity , Conservation of Biodiversity (Insitu & Exsitu)
5. Renewable & Non – renewable resources, Brief account of Forest , Mineral & Energy (Solar Energy & Geothermal Energy) resources
6. Water Conservation, Rain water harvesting & Watershed management.

UNIT – II : ENVIRONMENTAL POLLUTION , GLOBAL ISSUES & LEGISLATION : (15 hrs.)

1. Causes, Effects & Control measures of Air Pollution, Water Pollution
2. Solid Waste Management
3. Global Warming & Ozone layer depletion.
4. Ill – effects of Fire- works
5. Disaster management – floods, earthquakes & cyclones
6. Environmental legislation :-
   (a) Wild life Protection Act (b) Forest Act (c) Water Act (d) Air Act
7. Human Rights
8. Women and Child welfare
9. Role of Information technology in environment and human health

FIELD STUDY: (5 hrs.)

Pond Ecosystem
Forest Ecosystem

SUGGESTED BOOKS :

1. Environmental Studies - from crisis to cure – by R. Rajagopalan (Third edition) Oxford University Press.
2. Text book of Environmental Studies for undergraduate courses (second edition) by Erach Bharucha
3. A text book of Environmental Studies by Dr.D.K.Asthana and Dr. Meera Asthana
4. Environmental Studies (2019), R Venkateswara Rao, HPH

Skill Enhancement Course (SEC): Communicative Skills in English
C.B.C.S. – U.G. Common Core
2 Credits (2 hours per week)
Common paper for all UG III-Semester Courses

Objectives of the course:
The course has been designed for UG students to be able to create an awareness about the four fold language skills and it also motivates the students to use different language skills and their sub skills in their day to day life. They further train the students to have adequate knowledge and exposure to different genres of language in English.

The Syllabus:
Unit – I: Oral Skills

- Sub-skills of Listening
- Understanding the Real Purpose of Listening
- Factors affecting Listening Comprehension
- How to Develop Listening Comprehension
- Essential Elements for Speaking
- Sub-skills of Speaking
- How to Develop Speaking Skills

(The following areas to be covered: Speech Sounds in English, Stress, Intonation, Rhythm, and Voice Quality, Characteristics of a Speech, Group Discussion, Mock Interview, JAMs and Strategies for Spoken English)

Unit – II: Written Skills

- Sub-skills of Reading
- How to read, reflect and interpret the text
- Factors affecting Reading comprehension
- How to develop Reading Skills

- Essential Elements for Writing
- Sub-skills of Writing
- Factors affecting Writing skills
- How to get mastery in Writing

(The following areas to be covered: Narrative passages, Reading and understanding advertisements, matrimonial, classifieds and resumes, brochures, tabular forms; Review of articles, news items and books, Paragraph Writing, Letter Writing, Notice,
Invitation, Resume and qualities of good handwriting.)

SATAVHANA UNIVERSITY

UG SEMESTER V (UNDER CBCS)

SKILL ENHANCEMEMNT COURSE III

(B.A./B.Sc.) NOT BCOM

VERBAL REASONING FOR APTITUDE TEST

Credits: 2

Theory: 2 Hours/ week Marks - 50 (40+10)

Unit – I NUMBERS AND DIAGRAMS

1.1Series Completion: Number series, Alphabet Series

1.2Series Completion: Alpha Numeric Series, Continuous Pattern Series

1.3 Logical Venn Diagrams

1.4 Mathematical Operations: Problem solving by substitution, Interchange of signs and numbers

Unit – II ARITHMETICAL REASONING

2.1 Mathematical Operations: Deriving the appropriate conclusions

2.2 Arithmetical Reasoning: Calculation based problems, Data based problems

2.3 Arithmetical Reasoning: Problems on ages, Venn diagram based problems

2.4 Cause and Effect Reasoning

Text Book: A Modern Approach to Verbal & Non-Verbal Reasoning by

Dr. R.S. Agarwal

GENERIC ELECTIVE II
(FOR ALL FACULTTIES)

BC 602: WATER RESOURCES MANAGEMENT

Paper: BC602 Max. Marks: 40+10

PPW: 2 Hrs Exam Duration: 1½ hrs

UNIT-I

1. Importance of Natural Resources – Different Types and Resources
2. Significance of Water Resources and their uses
3. Conservation of water and recycling of the water – Global distribution of water
4. Water shed programmes and their management
5. Storing the rain water in tanks and recharging ground water

Unit-II

6. Rain water harvesting in rural areas (*chekdam, trenches* etc.,)
7. Overuse of surface and ground water and control measures.
8. Aims, objectives and implementation of *Mission Bhagiratha* (Telangana Government Drinking water programme)
9. Aims, objectives and implementation of *Mission Kakatiya* (Telangana Government minor irrigation programme)
10. Issues and challenges in Water Resources Management

SATAVHANA UNIVERSITY

UG SEMESTER V (UNDER CBCS)

GENERIC ELECTIVE I

(FOR ALL FACULTTIES)

PUBLIC HEALTH AND HYGIENE

Credits: 2

Theory: 2Hours/week Marks: 50 (40+10)

UNIT – I: NUTRITION AND ENVIRONMENT

1.1 Balanced Diet and Malnutrition.

1.2 Nutritional Deficiencies and Disorders- Carbohydrates, Proteins, Lipids, Vitamins and Minerals.

1.3 Occupational, Industrial, Agricultural and urban Health-Exposure at work place, urban areas, Industrial workers, Farmers and Agricultural labourers, Health workers and Health Disorders and Diseases.

1.4 Environmental Pollution and associated Health hazards, Water borne diseases and Air borne diseases.

UNIT-II : DISEASES AND HEALTH CARE

2.1 Causes, Symptoms, Diagnosis, Treatment and Prevention - Malaria, Filariasis,

Measles, Polio, Chicken Pox, Rabies, Plague, Leprosy

2.2 Causes, Symptoms, Diagnosis, Treatment and Prevention of non communicable diseases - Hypertension, Coronary Heart diseases, Stroke, Diabetes, Obesity and Mental ill-health.

2.3 Health care legislation in India – Termination of Pregnancy act, Maternity Benefit act, Bio-medical waste act, ESI Act.

2.4 First Aid and Health Awareness, Personal health care, Record maintenance.

ECONOMICS
SEMESTER – I [CBCS]
MICRO ECONOMICS - I

Unit – I :Demand Analysis

Introduction to Economics – Definition, Nature and Scope of Economics – Micro and Macro Economic Analyses – Concept of Demand and Law of Demand – Determinants of Demand – Types of Demand – Demand Function – Shifts in Demand – Concept of Supply and Law of Supply – Market Equilibrium – Elasticity of Demand – Price, Income and Cross Elasticities of Demand – Measurement Methods of Price Elasticity of Demand

Unit – II : Utility Analysis

Cardinal and Ordinal Utility Approaches – Law of Diminishing Marginal Utility – Law of EquiMarginal Utility – Consume r Surplus – Indifference Curve Analysis: Assumptions, Properties, Budget Line and Consumer's Equilibrium – Derivation of Demand Curve with the help of Indifference Curves – Price Effect, Income Effect and Substitution Effect

Unit – III :Production Analysis

Concepts of Production, Production Function and Factors of Production – Factor Payments: Rent, Wages, Interest and Profit – Law of Variable Proportions – Isoquant, Isocost Curves and Producer's Equilibrium – Laws of Returns to Scale – Economies and Diseconomies of Scale – Cost Analysis: Total, Average and Marginal Cost Curves in Short Run and Long Run – Revenue Analysis: Total, Average and Marginal Revenue Curves – Relationship among Average Revenue, Marginal Revenue and Elasticity of Demand

Unit – IV : Market Structure Analysis- I

Concepts of Firm, Industry and Market – Classification of Markets – Objectives of the Firm – Equilibrium of a Firm – Pe rfect Competition: Concept, Characteristics, Equilibrium of Firm and Industry during Short Run and Long R un – Monopoly: Concept, Types, Characteristics and Equilibrium of the Firm – Price Discrimination – Comparison between Perfect Competition and Monopoly

Unit – V : Market Structure Analysis – II

Monopolistic Competition: Concept, Characteristics, Equilibrium of the Firm and Selling Costs – Oligopoly: Concept, Characteristics and Price Rigidity – Kinky Demand Curve – Duopoly: Concept and Characteristics – Cournot Model

SEMESTER – II [CBCS]
MICRO ECONOMICS - II

Unit – I : Introduction

Meaning, Nature & Scope and Importance of Macro Economics – Concept of Circular Flow of Incomes – Macro Economic Paradox – National Income Analysis: Concepts and Components – Methods of Measure ment – Importance of and Difficulties in the Estimation of National Income – Limitations of National Income as a Measure of Welfare – Social Accounting

Unit – II :Theories of Income and Employment

Classical Theory of Employment: Say's Law of Markets and Pigou's Wage Cut Policy – Keynesian Theory of Income and Employment: Effective Demand, Aggregate Demand Function and Aggregate Supply Function – Consumption Function: Average Propensity to Consume (APC) and Marginal Propensity to Consume (MPC) – Factors Determining Consumption Function – Savings Function: Average Propensity to Save and Marginal Propensity to Save – Concepts of Multiplier, Accelerator and Super-Multiplier

Unit – III : Investment & Theories of Interest Rate

Capital and Investment: Types of Investment, Determinants of Level of Investment – Marginal Efficiency of Capital – Ex-Post and Ex- Ante Investment and Savings – Classical, Neo-Classical and Keynesian Theories of Inte rest – Simultaneous Determination of Interest and Real Income through IS -LM Frame work in a Closed Economy

Unit – IV :Supply of Money & Demand for Money

Meaning, Functions and Classification of Money – Money Supply: Measures – Measures of Money Supply with reference to India: M1, M2, M3 and M4 – Classical Theories of Money: Fisher's and Cambridge Versions of Quantity Theory of Money – Keynes' Theory of Money and Prices.

Unit – V :Inflation & Trade Cycles

Inflation: Concept, Types, Causes and Measurement –Effects (Consequences) of Inflation – Measures to Control Inflation – Concepts of Phillips Curve, Deflation and Stagflation – Trade Cycles: Concept, Nature, Causes, Phases and Remedial Measures.

SEMESTER – III [CBCS]
MICRO ECONOMICS - III

Unit – I :Market StructureAnalysis - II

Monopoly: Concept, Types, Characteristics and Equilibrium of the Firm - Price Discrimination -Comparison between Perfect Competition and Monopoly

Unit –II : Market Structure Analysis - II

Monopolistic Competition: Concept, Characteristics, Equilibrium of the Firm and Selling Costs –Oligopoly:Concept, Characteristics and Price Rigidity - Kinky Demand Curve - Duopoly: Concept and Characteristics- Cournot Model

UNIT-III: Pricing strategies

Pricing practices: Cost plus pricing, Marginal cost pricing, Rate of return pricing, Product life pricing, Priceskimming, Penetration pricing, Markup pricing, State intervention and Administered prices.

UNIT - IV: Distribution and Factor pricing

Functional and Personal Distribution, Marginal Productivity theory of Distribution, Ricardo theory of Rentand Quasi rent, Theories of Wages, Theories of Profit, Risk and uncertainty, Concept of interest.

UNIT - V: Theories of International Trade

The basis of International Trade; Classical Theories of Trade- Adam Smith, Ricardo; Modern Theories ofTrade - Hecksher and Ohlin Model; Factor Price Equalization Theorem; Rybezynski Theorem, LeontiefsParadox.

SATAVAHANA UNIVERSITY,KARIMNAGAR

U.G. ECONOMICS SYLLABUS (Under CBCS)

B.A. III YEAR

SEMESTER – VI : DISCIPLINE SPECIFIC ELECTIVE COURSE (Credits:4)

COURSE – VIII (a) : INDUSTRIAL ECONOMICS

UNIT – I: Meaning and classification of Industries:

Use-based, Resource Based and ASI Two and Three Digit classification. Industrial Location theories: Weber, Sargent Florence, and Losch - factors affecting industrial location.

UNIT – II: Market Structure and Market Performance:

Types of Markets based on Place, Time and Competition. Concepts & Organization of a firm. Market Structure; Sellers Concentration; Product Differentiation; Entry Conditions; Economics of Scale.

UNIT – III: Industrial Pattern under Five Year Plan:

Industrial economic concentration and remedial measures. Industrial Policy 1991: Role of Public and Private Sector, LPG Program. Recent Trends in Industrial growth.

UNIT – IV: Industrial Finance:

Industrial Finance: Owned, External and other Components of Funds; Role, Nature, Volume and types of Institutional Finance – State Level Financial Institutions and Commercial Banks.

Basic Reading List:

1. Ahuliwalia, I.J. (1985) Industrial Growth in India, Oxford University Press, New Delhi.
2. Barthwal, R.R. (1985), Industrial Economics, Wiley Eastern Ltd., New Delhi.
3. Chemuliam, F. (1994), Industrial Economics: Indian Perspective (3RD Edition), Himalaya Publishing House, Mumbai.
4. Desai, B. (1999), Industrial Economy in India (3rd Edition,) Himalaya Publishing House, Mumbai.
5. Divine, P.J. and R.M. Jones Et. Al (1976), An Introduction to Industrial Economics, George Allen and Unwin Ltd., London.
6. Hay, D. and D.J.Morris (1979), Industrial Economics: theory and evidence, Oxford University Press, New Delhi.
7. Kuchhal, S.C. (1980), Industrial Economy of India (5th Edition), Chaitanya Publishing House, Allahabad.

SATHAVAHANA UNIVERSITY

B.A. III Year

Semester – VI : Core Course

Course – VII : **Telangana Economy**

Unit – I : Telangana Economy : Human Resources

Economic History of Telangana – Demographic Features of Telangana – Occupational Distribution of Population in Telangana – Sectoral Distribution of Population – Migration and factors affecting it – Social Infrastructural Development : Educationand Health.

Unit – II : Gross Domestic Product, Product and Unemployment

Trends in Gross State Domestic Product and per Capita Income in Telangana – Sectoral Contribution to Gross State Domestic Product – Inequalities in the Distribution of Income and Wealth – Poverty & Unemployment in Telangana Trends, Causes & Consequences – Poverty Alleviation & Employment Generation Programmes in Telangana – Other welfare Programmes in Telangana.

Unit – III : Agricultural Sector

Growth of Agriculture in Telangana Economy – Trends in Agricultural Production and Productivity – Determinants of Agricultural Productivity – Cropping Pattern – Agrarian Structure and Land reforms – Irrigation : Sources and Trends – Mission Kakatiya – Agricultural Credit and Rural Indebtedness, crop insurance – Agricultural Marketing.

Unit – IV : Industrial Sector

Structure of Telangana Industry – Growth and Pattern of Industrial Development to Telangana – Industrial policy of Telangana – Special Economic Zones (SEZ) – Role of Small Scale Industries in Telangana Economy – Problems & Remedial Measures of Small Scale Industries : Industrial Sickness – Industrial Finance in Telangana.

Unit – V : Service and Infrastructural Sector

Importance of Tertiary Sector in Telangana – Infrastructural Development in Telangana : Transport, Energy, Communication and Information Technology – Science & Technology – Banking & Insurance – Tourism Development – Regional Imbalances : Causes, Consequences & Remedial Measures.

SATAVAHANA UNIVERSITY,KARIMNAGAR

U.G. ECONOMICS SYLLABUS (Under CBCS)

B.A. III YEAR

SEMESTER – V: DISCIPLINE SPECIFIC ELECTIVE COURSE (Credits:4)

COURSE – VI (b) : ECONOMICS OF DEVELOPMENT AND INFRASTRUCTURE

Unit – I: Economic Development and Growth

Concepts of Economic Growth, Development Underdevelopment and Deprivation – Objectives of Economic Development – Indicators of Economic Development: National Income, Per Capita Income, Physical Quality of Life Index, Human Development Index, Multi-Dimensional Poverty Index and other Indices – Characteristics of Underdeveloped Countries

Unit – II: Factors of Economic Development

Factors Hindering Economic Development – Factors Promoting Economic Development – Population and Economic Development – Concept of Population Explosion – Theories of Demographic Transition – Human Resource Development and Economic Development – International Aspects of Economic Development: Benefits of Trade – Concept of Unequal Exchange

Unit – III: Theories of Economic Development

Rosenstien Rodan's Big Push Theory – Ragnar Nurkse's Balanced Growth Strategy – Hirschman's Unbalanced Growth Strategy – Lewis Theory of Economic Development with Unlimited Supplies of Labour – Schumpeter's Theory of Economic Development – Choice of Techniques

Unit – IV: Infrastructure and Economic Development

Infrastructure and Economic Development – Infrastructure as a Public Good – Concepts and Components of Social and Physical Infrastructure – Special Characteristics of Public Utilities – Social Infrastructure: Education and Health

SATAVAHANA UNIVERSITY,KARIMNAGAR

U.G. ECONOMICS SYLLABUS (Under CBCS)

B.A. III YEAR

SEMESTER – V : CORE COURSE (Credits - 5)

COURSE – V: INDIAN ECONOMY

Unit – I: Basic Structure of the Indian Economy

Concepts of Development, Underdevelopment, Deprivation & Growth with reference to India(in brief) – Basic Features of Indian Economy: Growth and Structural Changes in Indian Economy – Demographic Features – Population: Size, Growth, Composition and their Implications on Indian Economy – Concept of Demographic Dividend – Occupational Distribution of Population in India – Population Policy of India – Development of Socio-Economic Infrastructure: Education and Health

Unit – II: National Income, Poverty and Unemployment

Estimation of National Income – Trends and Composition of National Income in India – Income Inequalities in India: Magnitude, Causes, Consequences and Remedial Measures – Poverty in India: Concept, Types, Trends, Causes and Consequences – Unemployment in India: Concept, Types, Trends, Causes and Consequences – Poverty Alleviation and Employment Generation Programmes in India

Unit – III: Planning and Public Policy

Five Year Plans: Concept and Objectives – Review of Five Year Plans – 12th Five Year Plan – *NITI Aayog* – Economic Reforms: Liberalisation, Privatisation and Globalisation – A *Critical Evaluation* – Impact of GATT and WTO on Indian Economy

Unit – IV: Agricultural Sector

Importance and Role of Agriculture in Indian Economy – Trends in Agricultural Production and Productivity – Land Reforms – Green Revolution – Agricultural Finance – Agricultural Marketing – Agricultural Pricing – Food Security in India

Unit – V: Industrial and Service Sector

Structure, Growth, Importance and Problems of Indian Industry – Large, Medium and Small Scale Industries: Role and Problems – Industrial Policies of 1948, 1956 and 1991 – FEMA and Competition Commission of India –Disinvestment Policy – Concept and Components of Service Sector – Infrastructural Development: Transport, Banking, Insurance, Information Technology, Communication and Tourism – Foreign Direct Investment

B.A. (ECONOMICS) SYLLABUS
Semester - IV
PUBLIC ECONOMICS
Discipline Specific Course - Paper - IV

Module - I: Introduction

Meaning and importance of Public finance - Evolution of public finance. Multiple theo public household-Public and Private goods-Markets mechanism in public and private g State as an agent of planning and development

Module- II: Public Expenditure

Theories of public expenditure- Wagner' s law of increasing state activities – Pea Wisemans hypothesis- Principle of Maximum Social advantage –Growth and patte public expenditure, Effects of public expenditure-Cost benefit analysis.

Module- III: Taxation & Public Debt

Approaches to taxation- Benefit approach, Ability to pay approach and Neutrality appr Elasticity and buoyancy of taxation-incidence and shifting of taxation-Types classification of taxes and VAT, Approaches to public debt.

Module- IV: Fiscal Policy & Federal Finance

Definition of fiscal policy and its objectives; Fiscal Policies for redistribution of incom wealth and stabilization – fiscal policies in a developing country, federal financial stru and its main features – Direct taxes-Income tax-Corporate tax. Indirect tax structure- U excise duties, customs duties, sales tax –VAT, Centre-State financial Relations.

Module- V: Budget

Budget – Classification of budgets –Economic, Functional, organizational, classificati budgets- performance programming and zero based budgets- surplus, balanced and d budgets- Concepts of budget deficit and their implications – State and Central budgets. I crisis and Fiscal sector reforms in India; Reports on Finance Commissions in India.

References

1. Atkinson, A Band J.E Siglitz (1980) :Lecturers on Public Economics, Tata McGraw New York.
2. Auerbach, A J and M. Feldson (Eds.) (1985) :Handbook of Public Economics, V North Holland, Amsterdam.
3. Buchanan, J M (1970) :The Public Finances, Richard D Irwin, Homewood.

SATAVAHANA UNIVERSITY,KARIMNAGAR

U.G. ECONOMICS SYLLABUS (Under CBCS)

B.A. III YEAR

SEMESTER – VI : DISCIPLINE SPECIFIC ELECTIVE COURSE (Credits:4)

COURSE – VIII (b) : Project Work

Project work is aimed at providing practical skills and hands on experience to the students in the domain areas related to Economics. The work details and reporting may be designed by the Boards of Studies of all the Universities where these electives are offered.

A Foundation Course

In

Human Values & Professional Ethics

Syllabus for I Year Degree Course

Module 1: Course Introduction - Need, Basic Guidelines, Content and Process for Value Education

1. Understanding the need, basic guidelines, content and process for Value Education
2. Self Exploration–what is it? - its content and process; 'Natural Acceptance' and Experiential Validation- as the mechanism for self exploration
3. Continuous Happiness and Prosperity- A look at basic Human Aspirations
4. Right understanding, Relationship and Physical Facilities- the basic requirements for fulfillment of aspirations of every human being with their correct priority
5. Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario
6. Method to fulfill the above human aspirations: understanding and living in harmony at various levels

Module 2: Understanding Harmony in the Human Being - Harmony in Myself!

7. Understanding human being as a co-existence of the sentient 'I' and the material 'Body'
8. Understanding the needs of Self ('I') and 'Body' - Sukh and Suvidha
9. Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer)
10. Understanding the characteristics and activities of 'I' and harmony in 'I'
11. Understanding the harmony of I with the Body: Sanyam and Swasthya; correct appraisal of Physical needs, meaning of Prosperity in detail
12. Programs to ensure Sanyam and Swasthya

    - Practice Exercises and Case Studies will be taken up in Practice Sessions.

Module 3: Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship

13. Understanding harmony in the Family- the basic unit of human interaction
14. Understanding values in human-human relationship; meaning of Nyaya and program for its fulfillment to ensure Ubhay-tripti;

    Trust (Vishwas) and Respect (Samman) as the foundational values of relationship