H.T.NO._____ CODE: ENG102

GIRRAJ GOVT. COLLEGE (Autonomous), NIZAMABAD
FACULTY OF ARTS
M.A. (ENGLISH) I SEMESTER EXAMINATION, FEBRUARY-2024
ENGLISH POETRY

Time: 3 Hours **Max. Marks: 70**

SECTION-A

I. Answer any FIVE of the following questions **(5x4=20)**

1. Write a note on the features of Renaissance.
2. Theme of Donne's poem "A Valediction".
3. Imagery in "Ode on a Grecian Urn".
4. Discuss the visual and aural imagery in the poem "Dover Beach".
5. Tone and mood of D.H. Lawrence's poem "Piano".
6. Write a note on Modernism.
7. Paradox in the title of John Donne's "The Canonization".
8. Explain "The Lamb and The Tyger" symbolize in Blake's poetry.
9. Elaborate on the character of the Duke in "My Last Duchess".
10. Larkin's inner idea on his visit to Church.

SECTION-B

II. Answer all the following questions **(5x10=50)**

11.(a) Discuss the Features of Neo-Classicism.

(OR)

(b) What is War Poetry? Elaborate with examples.

12.(a) Examine Chaucer's description of nature and the pilgrimage in "*The General Prologue to the Canterbury Tales*".

(OR)

(b) How does Milton use the epic conventions in Book IX of *Paradise Lost?*

13.(a) Discuss the elements of memory and nature in "Tintern Abbey".

(OR)

(b) Discuss Shelley's use of imagery in "Ode to the West Wind".

14.(a) Critically appreciate Elizabeth Barrett Browning's 'Sonnets from the Portuguese'.

(OR)

(b) How would you describe Ulysses' treatment of his son, Telemachus?

15.(a) Discuss the important themes of "*The Waste Land*".

(OR)

(b) What does Larkins's "Churchgoing" reveal about Modern Society?

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H.T.NO._____ CODE:PHY102

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc. (PHYSICS) I Semester Examination, February-2024

CLASSICAL MECHANICS

Time : 3 hrs Max marks: 70

Section- A

I. Answer any five of the following questions: **(5x6=30 Marks)**

1. Write a note on Pseudo Force.
2. Write a note on World Point and World Line.
3. What are Constraints? Classify them with examples.
4. Write a note on Velocity Dependent Potential.
5. What is the Hamiltonian Function? Prove that the Hamiltonian H of a conservative system is equal to the total energy of the system.
6. Write a note on Cyclic Coordinates. Give examples.
7. Deduce the Eigen Value equation for small oscillations.
8. What are Action-Angle Variables? Explain with examples.

Section-B

II. Answer the following questions **(4x10=40 Marks)**

9.a) Define Euler's angles and obtain an expression for the complete transformation matrix.

Or

b) Deduce Lorentz transformation equations from Minkowski space.

10.a) Derive Lagrangian equation for a charged particle in an electromagnetic field.

Or

b) What is D'Alembert's principle? Derive Lagrange's equations of motion from it for conservation system.

11.a) Derive Hamilton's canonical equations of motion. Obtain Hamilton's equation of motion for a particle moving in a central force field.

Or

b) Show that the Fundamental Poisson Brackets are invariant under canonical transformation.

12.a) Explain Hamilton-Jacobi theory and apply it for one- dimensional Harmonic Oscillator.

Or

b) Discuss the Free Vibrations of Linear Triatomic Molecule.

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H.T.NO._____ CODE: ZOO102

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc. (ZOOLOGY) I Semester Examination, February-2024

TOOLS AND TECHNIQUES IN BIOLOGY

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any SIX of the following questions **(6x5=30 Marks)**

1. Explain the resolving power of different Microscopes.
2. What is RIA and write about its applications?
3. Describe molecular imaging of Radioactive Materials.
4. Elaborate on ECG.
5. NMR Spectroscopy.
6. Give brief account on Mass Spectrometry.
7. Write about Gel Electrophoresis.
8. Explain the Gene Knock Out method.

Section-B

II. Answer all of the following questions **(4x10=40 Marks)**

9.a) Write an essay on Electron Microscopy.

(OR)

b) Explain the types of *In situ* localization techniques used in living cells.

10.a) Describe the Radio labeling techniques used in Biology.

(OR)

b) Explain the various Brain Scanning Techniques.

11.a)) Illustrate about the Protein Sequence Databases.

(OR)

b) Write an essay on Mass Spectroscopy and its applications.

12.a) Write essay on Cloning Vectors.

(OR)

b) Describe the method of Genomic Libraries Generation.

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H.T.NO._____ CODE: BLS102

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD

Faculty of Library & Information Science

B.L.I.Sc. I Semester Examination February-2024

Library Classification (Theory) (CC)

TIME: 3 Hrs. MAX.MARKS: 70

Section – A

I. Answer any five of the following: (5x4=20)

1. Fission
2. UDC
3. Common Isolates
4. Cow-Calf Principle
5. Call Number
6. Loose Assemblage
7. Enumerative Classification
8. Main Class
9. Mnemonic Device
10. Verbal Plane

Section – B

II. Answer the following: (5x10=50)

11. a) What is Library Classification? Need and Purpose of Library Classification

(OR)

b) Write an essay on modes of formation of subjects with examples.

12. a) Explain a brief study of major schemes like Universal Decimal Classification (UDC).

(OR)

b) Describe the Basic Principles in Colon Classification.

13. a) What are the fundamental categories? Why are the fundamental categories is important in library classification?

(OR)

b) Discuss SR Ranganathan contribution to Library Classification.

14. a) Write about the principles of Facet Sequence.

(OR)

b) What is Helpful Sequence? Write about types of helpful sequence.

15. a) What is the Notation? Types of notations and its functions.

(OR)

b) What do you understand by Call Number? Explain different parts of call number with suitable examples.

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H.T.NO._____ CODE: BOT102

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD
Faculty of Science
M.Sc. (BOTANY) I Semester Examination, February-2024
MYCOLOGY

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any SIX of the following questions **(6x5=30 Marks)**

1. Saprophytic Nutrition.
2. Heterokaryosis
3. Spore dispersal in *Pilobolus*
4. Types of Mycelia in Basidiomycotina.
5. Fungi as Animal Parasites
6. Nutritional Value of Mushrooms
7. Bacterial Symbiosis.
8. Chemical Nature of TMV

Section-B

II. Answer all of the following questions **(4x10=40 Marks)**

9.a) Explain in detail about Asexual Reproduction in Fungi and add a note on spores formed by Asexual Reproduction.

(OR)

b) Write a descriptive account on Heterothallism and its mechanism with suitable examples.

10.a) Give detail account on somatic and reproductive phases of *Peronospora.*

(OR)

b) Explain the life cycle of *Melampsora* and its economic importance.

11.a) Describe the substrate, preparation medium and process of Alcohol production.

(OR)

b) Explain the role of Fungi in Agriculture as plant parasites with suitable examples.

12.a) Give an account on ultrastructure of Bacterial cell with labeled diagram.

(OR)

b) Enumerate the features of Isolation and Purification of Virion.

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H.T.NO._____ CODE: MCM102

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD
Faculty of Commerce
M.Com. I Semester Examination, February-2024
MARKETING MANAGEMENT

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any five of the following questions **(5x4=20 Marks)**

1. Societal Dimension of Marketing
2. Mega Marketing
3. Target Marketing
4. Brand Loyalty
5. Packaging
6. Market Penetration Pricing
7. Logistics Management
8. Importance of Channel Management
9. Promotion Mix
10. Public Relations

Section-B

II. Answer all of the following questions **(5x10=50 Marks)**

11.a) What are the Recent Trends in Marketing?

(OR)

b) Define Service. Explain the Service Marketing Mix with examples.

12.a) What are the major factors that influence Consumer Behavior?

(OR)

b) Define Market Segmentation. Explain various bases for Market Segmentation.

13.a) Explain New Product Development Process.

(OR)

b) What are the different Pricing Methods? Explain.

14.a) What are the contemporary marketing channels in India?

(OR)

b) Define Channel Conflict. Explain channel conflict resolution process.

15.a) What are the major decisions in Advertising?

(OR)

b)Define Sales Promotion. Explain its objectives and tools.

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H.T.NO._____ CODE: ECO102

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD
FACULTY OF SOCIAL SCIENCE
M.A. (ECONOMICS) I Semester Examination, February-2024
MACRO ECONOMIC ANALYSIS-I

TIME: 3 Hrs. **MAX.MARKS: 70**

Section-A

I. Answer any five of the following questions. **(5x4=20 Marks)**

1. Explain in brief Input-Output accounting
2. Scope of Macroeconomics.
3. Consumption Function
4. Briefly explain absolute income hypothesis.
5. What do you understand by Investment Function?
6. Function of SEBI.
7. High powered money.
8. Types of budget deficits.
9. Fisher's Transaction Approach.
10. Define Speculative Demand for Money.

Section-B

II. Answer all of the following questions **(5x10=50 Marks)**

11.a) Explain the Circular Flow of Incomein the Four-SectorOpen Economy.

(OR)

b) Explain in brief various forms of national income accounting.

12.a) Explain Keynes's Psychological Law of consumption and explain its implications.

(OR)

b) Explain the Life Cycle Income Hypothesis of Consumption.

13.a) What is meant by marginal efficiency of capital? How is it calculated? Explain with suitable example.

(OR)

b) Explain the types and functions of Capital Market.

14.a) Explain in brief various theories of Money Supply.

(OR)

b) What are the factors that determine money supply in India? Explain.

15.a) Explain Keynes's liquidity preference approach.

(OR)

b) Explain the Cambridge Cash-Balance theory of demand for money.

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H.T.NO._____ CODE: CHE102

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc.(Chemistry) I Semester Examination, February-2024

ORGANIC CHEMISTRY

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any SIX of the following questions **(6x5=30 Marks)**

1. Explain Fisher molecular representation with suitable example
2. What is resolution? Mention resolution techniques
3. Illustrate *syn* addition to alkenes with suitable reagent
4. Write the possible conformations of D (+) Glucose and justify most stable conformer
5. Write a note on acid hydrolysis of proteins
6. How is orientation and stereo selectivity in E_2 elimination reaction
7. Heterocyclic compounds are important as drugs, comment
8. Discuss the reactivity of indole with suitable example

Section-B

II. Answer all of the following questions **(4x10=40 Marks)**

9. a) Explain symmetry operations and symmetry elements thoroughly with examples

(OR)

b) How spectral and chemical methods are useful in determination of configuration of **E, Z** isomers

10. a) Elaborate E1 and E1CB elimination reactions with their mechanisms

(OR)

b) How do you determine the reaction mechanism by using following methods?

i) Use of isotopes ii) Chemical trapping iii) Crossover experiments

11.a) Explain the structure elucidation and synthesis of sucrose

(OR)

b) How do you determine the amino acid sequence in polypeptides by end group analysis ?

12.a) Explain the synthesis and reactivity of Coumarin.

(OR)

b) Discuss the quinolines synthesis and their reactivity.

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H.T.No._____ Code: MAT102

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD

Faculty of Science

M.Sc. (Mathematics) I Semester Examination February-2024

REAL ANALYSIS

Time: 3 Hrs Max. Marks 70

SECTION-A

I. Answer any five questions to the following. **5x6=30 Marks**

1. If p > 0, then show that $\lim_{n\to\infty} \frac{1}{n^{1/p}} = 0$
2. Discuss the types of discontinuity for the function $f(x) = \begin{cases} 1 & if\ x\ is\ rational \\ 0 & if\ x\ is\ irrational \end{cases}$
3. Show that $\int_{\underline{a}}^{b} f d\alpha \leq \int_{a}^{\bar{b}} f d\alpha$
4. If $f_1 \in \mathcal{R}(\alpha)$ and $f_2 \in \mathcal{R}(\alpha)$on [a, b], then show that $f_1 + f_2 \in \mathcal{R}(\alpha)$.
5. Let $f_n(x) = \frac{\sin nx}{\sqrt{n}}$ where x is real and $n = 1,2,3, \ldots \{f_n'\}$does not converge to f'
6. If f is continuous on [0, 1] and if $\int_0^1 f(x)\, x^n dx = 0 (n = 0,1,2,3,..)$ then prove that $f(x) = 0$ on [0,1].
7. If $A \in L(R^n, R^m)$ and $B \in L(R^m, R^k)$, then show that $\| BA \| \leq \| B \| \| A \|$.
8. Define linear transformation and give an example.

SECTION-B

II. Answer all questions to the following. **4x10=40 Marks**

9. a) State and prove Root test

   (OR)

   b) Let f be a continuous mapping of a compact metric space X into a metric space$Y$. Then f is uniformly continuous on X.

10. a) If f is monotonic on $[a, b]$, and if α is continuous on $[a, b]$, then show that $f \in \mathcal{R}(\alpha)$

    (OR)

    b) State and prove the fundamental theorem of calculus

11. a) Prove that the sequence of functions $\{f_n\}$, defined on E, converges uniformly on E if and only if for every $\varepsilon > 0$ there exists an integer N such that $m \geq N, n \geq N, x \in E$ implies $|f_n(x) - f_m(x)| \leq \varepsilon$.

    (OR)

    b) Suppose$\{f_n\}$ is a sequence of functions, differentiable on $[a, b]$ and such that $\{f_n(x_0)\}$ Converges for some point x_0 on $[a, b]$. If $\{f_n'\}$ converges uniformly on [a, b], then show that$\{f_n\}$converges uniformly on $[a, b]$, to a function f, and$f'(x) = \lim_{n\to\infty}\{f_n'(x)$ $(a \leq x \leq b)$.

12. a) Prove that a linear operator A on a finite-dimensional vector space X is one-to-one if and only if the range of A is X.

    (OR)

    b) If E is an open set in R^n, **f** maps E into R^m, **f** is differentiable at $\mathbf{x}_0 \in E$, **g** maps an open set containing $\mathbf{f}(E)$ into R^k, and **g** is differentiable at $\mathbf{f}(\mathbf{x}_0)$. Then show that the mapping **F** of E into R^k defined by $\mathbf{F}(\mathbf{x}) = \mathbf{g}(\mathbf{f}(\mathbf{x}))$is differentiable at $\mathbf{x}_0$, and $\mathbf{F}'(\mathbf{x}_0) = \mathbf{g}'(\mathbf{f}(\mathbf{x}_0))\mathbf{f}'(\mathbf{x}_0)$.

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H.T.NO._____ CODE: CS1002

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc. (Computer Science) I Semester Examination, February-2024

COMPUTER ORGANIZATION

Time: 3 Hours Max Marks: 70

Section-A

I. Answer any Six of the following questions (6x5=30 Marks)

1. Write about Multiplexers.
2. What is Distributed Computing? Write about it.
3. What is Assembly Language? How to write Assembly Language Code?
4. Write the Operations of Main Memory.
5. What is the need of I/O Interface Module?
6. How to Access I/O Devices?
7. Differentiate RAM and ROM.
8. What are the advantages of Virtual Memories?

Section-B

II. Answer all of the following questions (4x10=40 Marks)

9.a) Describe about Basic Functional Units and Operational Concepts of a Computer.

(OR)

b) What are Logic Gates? Explain the Practical Implementation of Logic Gates,

10.a) Describe various Addressing Modes of the instruction used during program execution.

(OR)

b) Explain the Floating Point Representation with an example.

11.a) Describe about Standard I/O Interfaces.

(OR)

b) Explain about Direct Memory Access.

12.a) What is Cache Memory? Explain different Mapping Functions in it.

(OR)

b) Discuss about Online Storage,

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H.T.NO._____ Code: ENG103

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Arts

M.A.(English) I Semester Examination, February-2024

INDIAN WRITING IN ENGLISH-I

Time: 3 Hours **Max. Marks: 70**

Section-A

I. Answer any five of the following questions **(5x4=20 Marks)**

1. Casteism.
2. The New Indian Woman.
3. Write a note on Toru Dutt's poem "The Lotus".
4. Bio-note on Sri Aurobindo.
5. Sketch the character of Matangini.
6. Bio-note on Zeenuth Futehally.
7. Narrative Technique of Raja Rao.
8. Title significance of "*The Guide*".
9. Bio-note on Kancha Ilaiah.
10. A note on Arundhati Roy.

Section-B

II. Answer all of the following questions **(5x10=50 Marks)**

11.a) Write an essay on the Indian National Movement.

(OR)

b) Critically examine the rise of Indian Novel in English.

12.a) Discuss the thematic concerns in the poems of Sri Aurobindo's prescribed for your study.

(OR)

b) Attempt a critical appreciation of Sarojini Naidu's "*The Gift of India*".

13.a) Discuss the depiction of social problems in "*Rajmohan's Wife*".

(OR)

b) Does the Novel *Zohra* represent the politics of the Indian Muslim consciousness? Discuss.

14.a) What is 'Stalapurana'? Write a detailed note on the Novel "*Kanthapura*".

(OR)

b) How does Narayan deal with theme of family relationships in "*The Guide*"?

15.a) Discuss the main ideas of Ambedkar's "The Annihilation of Caste".

(OR)

b) Critically examine Ilaiah's views on the text "Why I am not Hindu".

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H.T.NO._____ Code: ECO103

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD
Faculty of Social Science
M.A.(Economics) I Semester Examination, February-2024
QUANTITATIVE METHODS-I

Time: 3 Hours **Max. Marks: 70**

Section-A

I. Answer any five of the following questions. (5x4=20 Marks)

1. What is function? And explain any two types of Functions.
2. Concept of Derivative.
3. Concept of Maxima and Minima.
4. Briefly explain Multivariable Function.
5. Advantages of Sampling Method.
6. Distinguish between Primary and Secondary Sources of Data.
7. Briefly explain Perfect Positive and Perfect Negative Correlation with diagrams.
8. Concept of Standard Error of Regression.
9. Meaning of Cost-of-Living Index Number.
10. Differences between Weighted and Unweighted Index Numbers.

Section-B

II. Answer all of the following questions (5x10=50 Marks)

11. a) Discuss the uses and limitations of Mathematics in Economics.

(OR)

b) Define elasticity and explain its types.

12.a) What do you understand by Production Function? Explain the properties of Cobb-Douglas Production Function. **(OR)**

b) Explain the rules of Partial Differentiation.

13.a) Calculate standard deviation and coefficient of variation from the following data.

Price (x)	10	12	14	16	18	20	22
Quantity demanded (f)	4	10	16	24	14	8	6

(OR)

b) Find median marks of 45 students from the following data set.

Marks in Economics	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Students	5	8	12	7	6	5	2

[P.T.O.]

14.a) Calculate the Coefficient of Rank Correlation between Sales and Advertisement of a Car company from the following data and interpret the results.

Sales	80	75	58	65	72	70	85	60
Advertisement (in Rs.,000)	6	7	2	3	4	8	5	1

(OR)

b) What do you mean by Correlation and Regression? Explain the differences between Correlation and Regression.

15. a) Explain the methods of constructing Index Numbers and their uses.

(OR)

b) Calculate Fisher's Ideal index from the following data.

Commodities	Base year		Current year	
	Price (Rs.)	Quantity (in kg.)	Price (Rs.)	Quantity (in kg.)
Rice	3	20	5	18
Wheat	4	15	6	10
Bajra	6	12	7	8
Jowar	2	10	3	6

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H.T.NO._____ CODE: MCM103

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Commerce

M.Com. I Semester Examination, February-2024

FINANCIAL MANAGEMENT

Time: 3 Hours Max Marks: 70

Section-A

I. Answer any five of the following questions (5x4=20 Marks)

1. Define Financial Management.
2. What do you mean by Time Value of Money?
3. What are the difficulties in Capital Budgeting?
4. What is Sensitivity Analysis?
5. Define Marginal Cost of Capital.
6. Define Capital Structure.
7. Concept of Dividend.
8. What are the assumptions of Walter's Model Theory?
9. List out the objectives of Receivables Management.
10. Define Gross Working Capital and Net Working Capital.

Section-B

II. Answer all of the following questions (5x10=50 Marks)

11.a) "The Profit maximization is not an operationally feasible criterion." Do you agree? Illustrate your views.

(OR)

b) Explain in brief the functions of Financial Management.

12.a) Briefly discuss the Traditional Techniques of Capital Budgeting with their merits and limitations.

(OR)

b) Three projects have been suggested to BPL Company. The CFAT of them are as follows:

Projects	Years				
	0	1	2	3	4
X (Rs)	20,000	5,600	6,000	8,000	8,000
Y (Rs)	36,000	13,000	13,000	13,000	13,000
Z (Rs)	60,000	12,000	20,000	24,000	32,000

Assuming 12 per cent cost of capital, rank the projects based on Profitability Index method.

Continued on Page 2...

13.a) Explain the features of an appropriate Optimal Capital Structure. **(OR)**

b) Calcutta Pulp& Paper Mills has the following information.

Sources of finance	Book Value Weights(%)	Market Value (%)	Specific Cost (%)
Equity shares	30	36	13
Retained earnings	20	22	13
Preference shares	30	27	11
Debt	20	15	7

i) Calculate the Weighted Average Cost of Capital (WACC) using Book value and Market value weights.

ii) Calculate the Weighted Average Cost of Capital (WACC) using marginal weights if the company intends to raise the needed funds using 50 per cent debt, 35 per cent preference shares and 15 per cent retained earnings.

14.a) Briefly discuss the different types of Dividend Policies. **(OR)**

b) The following information is available in respect of a firm:

Earnings per share= Rs20

Rate of Capitalisation = 10%

Calculate the market price of the company's quoted shares under Walter's Model if the dividend Payout Ratio is 0.25% , 50%,75%, and 100%, if it can earn a return of: 15% (b) 10% and (c) 0.5%

15. a) Explain the sources of Working Capital. **(OR)**

b) From the following information of RRR company Ltd., for the next year, you are required to estimate the working capital needed to finance a level of activity of 2,08,000 units of production after adding a 5 per cent safety contingency.

Details	Cost per Unit (Rs)
Raw Materials	160
Direct Labour	60
Overheads (including depreciation or Rs.10)	130
Total cost	**350**
Profit	50
Selling price	**400**

Additional information:

1) Average raw materials in stock: One Month
2) Average materials – in – Process (50 per cent completion stage): Half–a–Month.
3) Average Finished Goods in Stock: One Month
4) Credit allowed by Suppliers: One Month
5) Credit allowed to Customers: Two Months.
6) Time lag in payment of wages: One-and–Half Week.

All sales are credit sales. Cash balance is expected to be Rs.75,000. You may assume that production is carried on evenly throughout the year and wages and overhead expenses accrue similarly.

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H.T.No._____ Code: MAT103

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD

Faculty of Science

M.Sc., (Mathematics) I Semester Examination February-2024

TOPOLOGY

Time: 3 Hrs **Max. Marks 70**

Section-A

I. Answer any five questions to the following. **5x6=30 Marks**

1. Let T_1 and T_2 be two topologies on a nonempty set X, and show the nt $T_1 \cap T_2$ is also a Topology on X.
2. Show that the real line and complex plane are separable.
3. Show that a continuous real or complex function defined on a compact space is bounced.
4. Prove that every sequentially compact metric space is compact.
5. Show that product of any non-empty class of Hausdorff Space is a Hausdorff Space.
6. Shew that any Finite T_1-Space is Discrete.
7. Show that all projections, being open mapping Send open Sets to open sets.
8. Show that $\mathbb{C}^n$ is connected.

Section-B

II. Answer all questions to the following. **4x10=40 Marks**

9. a) State and prove Lindelof's Theorem.

   [OR]

   b) Show that a topological space X is metrizatse $\Leftrightarrow$ there exist a homomorphism of X Onto a subspace of some metric space Y.

10. a) Prove that any closed subspace of a compact space is compact.

    [OR]

    b) State and prove Ascoli's theorem.

11. a) Prove that every Compact Hausdorff Space is normal.

    [OR]

    b) State and prove the Urysohn Imbedding Theorem.

12. a) State and prove the Generalized Heine-Borel Theorem.

    [OR]

    b) Prove that continuous image of a connected Space is connected.

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H.T.NO._____ Code: PHY103

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD
Faculty of Science
M.Sc.(Physics) I Semester Examination, February-2024
ELECTROMAGNETIC THEORY

Time: 3 Hours **Max Marks: 70**

Section- A

I. Answer any Six of the following questions: (6x5=30 Marks)

1. Write Poisson's and Laplace's equations and explain it.
2. Explain Scalar and Vector Magnetic Potential.
3. Discuss Electromagnetic Wave Propagation in Free Space.
4. Discuss Skin Effect in a conducting medium.
5. State the Boundary Conditions for E, D, B and H.
6. Distinguish between Normal and Anomalous Dispersion.
7. Write a short note on Retarded Potentials.
8. Describe the radiation from center fed linear antenna.

Section-B

II. Answer the following questions (4x10=40 Marks)

9.a) Derive the Maxwell's Electromagnetic Equations in Differential form and hence Obtain General wave equation.

(OR)

b) Derive Poynting theorem from Maxwell's Equations and explain the physical significance of the terms involved?

10.a) Discuss the Propagation of Electromagnetic waves in a conducting medium.

(OR)

b) Discuss the Electromagnetic waves in Unbounded Media.

11.a) Explain the Laws of Reflection by means of Fresnel's relations.

(OR)

b) Explain briefly Dispersion phenomenon in Non-conductors?

12.a) What is Lienard Wiechert Potentials? Derive an expression for the Electromagnetic field of a charge in arbitrary motion.

(OR)

b) Derive an expression for power radiated by an Oscillating 'Electric Dipole'.

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H.T.NO._____ CODE: CHE103

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc.(Chemistry) I Semester Examination, February-2024

PHYSICAL CHEMISTRY

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any SIX of the following questions **(6x5=30 Marks)**

1. Write a note on Entropy Change in Ideal Gas.
2. What is the physical significance of Helmotz Gibbs Free Energy.
3. How do you determine the solubility of product from EMF Measurements.
4. Explain the mean Ionic Activity Coefficient.
5. Write a note of Eigen functions and Eigen values.
6. What is Uncertainty Principle and write its significance.
7. Explain Lindemann's Theory with an example
8. Write the Swain -Scott equation and explain the terms involved in it

Section-B

II. Answer all of the following questions **(4x10=40 Marks)**

9.a) Derive the Clasius-Clapeyron Equation.

(OR)

b) Explain entropy as a function of P and T.

10.a) What is Liquid Junction Potential (LJP)? Derive the expression of LJP and how it will be eliminated?

(OR)

b) Derive the Debye -Huckel-Onsagar equation.

11.a) Describe the postulates of quantum mechanics.

(OR)

b) Explain the followings:

(i) Orthogonal Operator (ii) Hermitian Operator.

12.a) Explain the thermodynamic formulations of Transition State Theory.

(OR)

b) Derive the Rate Law of H_2-Br_2 Chain Reaction.

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H.T.NO._____ CODE: ZOO103

GIRRAJ GOVT.COLLEGE(A),NIZAMABAD

Faculty of Science

M.Sc.(Zoology) I Semester Examination, February-2024

ANIMAL PHYSIOLOGY & ETHOLOGY

Time: 3hrs **Max Marks:70**

Section-A

I. Answer any SIX of the following questions **(6x5=30Marks)**

1. Gastro Intestinal Hormones
2. Respiratory Pigments
3. Haemopoiesis
4. Myogenic Heart
5. Neuron
6. Electric Synapse
7. Aggression
8. Predation

Section-B

II. Answer all the following questions **(4x10=40Marks)**

9.a) Describe the Anatomy of Digestive system.

(Or)

b) Explain Transport of Gases.

10.a) Describe the Anatomy of Heart.

(Or)

b) Explain Urine Formation Mechanism.

11.a) Describe the Anatomy of Brain.

(Or)

b) Explain the mechanism of Muscle Contraction.

12.a) What is Pheromones? Explain Classification of Pheromones.

(Or)

b) Explain the social behavior mechanism in Insects.

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H.T.NO._____ CODE: BOT103

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD
Faculty of Science
M.Sc. (Botany) I Semester Examination, February-2024
BRYOLOGY, PTERIDOLOGY AND PALEONTOLOGY

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any SIX of the following questions **(6x5=30 Marks)**

1. L.S. of sporophyte in Marchantia
2. General Characters of Bryophyta
3. Heterospory
4. Telome theory
5. Filicales
6. Psilotum
7. Objectives of Paleobotany
8. Brief account of Medullaceae

Section-B

II. Answer all of the following questions **(4x10=40 Marks)**

9. a) Write essay on Evolution of sprophyte in Bryophytes.

(OR)

b) Describe in brief the life cycle of *Anthocerotales* with the help of suitable diagrams.

10. a) Explain about the Evolution of stele in Pteridophytes.

(OR)

b) Give a brief account on origin and evolution of Early Vascular Plants.

11.a) Explain reproduction and life cycle of *Lycopodiales.*

(OR)

b) Write essay on sexual reproduction in *Selaginellales.*

12.a) Give notes on Fossilization.

(OR)

b) Write about BSIP and its contributions.

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H.T.NO._____ CODE: CS1003

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc. (Computer Science) I Semester Examination, February-2024

OOPS with JAVA

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any Six of the following questions **(6x5=30 Marks)**

1. Explain Client side computing and server side computing.
2. Write short on Class Hierarchies.
3. Write about Constructors.
4. What are Inner Classes? How to specify them?
5. What are Abstract Methods? How to specify them?
6. Write short note on Garbage Collection.
7. Specify AWT Class Hierarchy.
8. Write the applications of Applets.

Section-B

II. Answer all of the following questions **(4x10=40 Marks)**

9.a) What are Object Oriented Paradigms? Explain them in detail.

(OR)

b) Describe the Components of Object Oriented Design.

10.a) Define Inheritance? How many types of Inheritance that Java allows? Explain them.

(OR)

b) Discuss the Mechanisms for Software Reuse.

11.a) Differentiate between Overloading and Overriding with sample code.

(OR)

b) Explain the Exception Handling Mechanism in Java.

12.a) Define Threads. How to create them? Explain Thread Synchronization with an example program.

(OR)

b) Describe different AWT Controls.

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H.T.NO._____ CODE: BLS103

Faculty of Library & Information Science
B.L.I.Sc. I Semester Examination, February-2024
Library Cataloguing (Theory) (CC)

TIME: 3 Hrs. **MAX.MARKS: 70**

Section–A

I. Answer any five of the following: **5x4=20 Marks**

1. Shelf List
2. Bibliography
3. Main Entry
4. Cross Reference Entry
5. PRECIS
6. Thesaurus
7. World Cat
8. OCLC
9. ISBD
10. Metadata

Section – B

II. Answer the following: **5x10=50 Marks**

11.a) Definition of Library Catalogue. Need and functions of the Library Catalogue.

(OR)

b) Describe the types of Library Catalogues.

12.a) What are the important items in Catalogue Entry? Explain.

(OR)

b) Explain the structure of AACR-2R.

13.a) Write about Pre-Coordinating Indexing System.

(OR)

b) Principles of Sears Lists of Subject Headings.

14.a) What is Library Co-operation? Discuss advantages and disadvantages.

(OR)

b) What is Union Catalogue? Write pre-requisites of Union Catalogue.

15.a) Discuss trends in Cataloguing.

(OR)

b) Write an essay on MARC-21 Standards and Structure.

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24/02/24

H.T.No. Code: MAT104

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD

Faculty of Science

M.Sc.(Mathematics) I Semester Examination February-2024

ELEMENTARY NUMBER THEORY

Time: 3 Hrs **Max. Marks 70**

SECTION–A

I. Answer any Six questions to the following. **6x5=30 Marks**

1. If $a \mid bc$ and $(a, b) = 1$, then show that a/c.
2. Prove that $n^4 + 4$ is composite if $n > 1$.
3. Prove that $\frac{n}{\varphi(n)} = \sum_{d/n} \frac{\mu^2(d)}{\varphi(d)}$.
4. If $n \geqslant 1$ then prove that $\log n = \sum_{d/n} N(d)$.
5. Let $a \equiv b(\text{mod m})$. If d/m and d/a then prove that d/b.
6. State and prove Little Fermat theorem.
7. Find the quadratic residues modulo 11.
8. State Chinese Remainder Theorem.

SECTION–B

II. Answer all questions to the following. **4x10=40 Marks**

9. a) Given any two integers a and b, there is a common divisor d of a and b of the form $d = ax + by$, where x and y are Integers, moreover every common divisor of a and b divides this d. **(OR)**

   b) State and prove division algorithm.

10. a). If $n \geqslant 1$ then prove that $\varphi(n) = n\prod_{p/n}\left(1 - \frac{1}{p}\right)$. **(OR)**

    b) State and prove Mobius Inversion Formula.

11. a) If p is an odd prime, let $q = (p-1)/2$. Then prove that $(q!)^2 + (-1)^q \equiv 0(\text{mod } p)$.

    (OR)

    b) State and prove Lagrange's Theorem.

12. a) Prove that (n/p) is completely multiplicative function of n.

    (OR)

    b) State and prove Gauss' Lemma.

H.T.NO._____ CODE: BOT104

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc.(Botany) I Semester Examination, February-2024

PLANT BIOCHEMISTRY AND INTERMEDIARY METABOLISM

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any SIX of the following questions **(6x5=30 Marks)**

1. Isozymes
2. Co-Factors
3. Glyoxylate Cycle
4. Sterols
5. GOGAT
6. Biosynthesis of GS
7. Fermentation
8. Cyanide Resistant Respiration

Section-B

II. Answer all of the following questions **(4x10=40 Marks)**

9. a) Explain First and Second Laws of Thermodynamics with suitable examples.

(OR)

b) Write a detailed account on the properties of Enzymes. Add a note on Allosteric enzymes.

10.a) Discuss on the structure and function of Polysaccharides.

(OR)

b) Discuss on the classification and function of Simple Lipids.

11.a) Write the classification and properties of Amino Acids.

(OR)

b) Write the classification and properties of Proteins.

12.a) Describe all the steps involved in Tri Carboxylic Acid Cycle (TCA).

(OR)

b) Describe all the steps involved in Hexose Phosphate Shunt (HMP Pathway)

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H.T.NO._____ CODE: ECO104

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD

Faculty of Social Sciences

M.A. (Economics) I Semester Examination, February-2024

PUBLIC ECONOMICS-I

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any five of the following questions. **(5x4=20 Marks)**

1. Distinguish between Public and Private Goods.
2. Briefly explain evolution of Public Finance.
3. Concept of rent seeking activity.
4. Concept of preference revelation.
5. Define Stabilization Policy.
6. Concept of rationale for Public Policy.
7. Cost-benefit analysis.
8. Effects of Public Expenditure.
9. Distinguish between Direct and Indirect Taxes.
10. Briefly explain ability to Pay Approach.

Section-B

II. Answer all of the following questions **(5x10=50 Marks)**

11.a) Critically explain the market mechanism in Public and Private Goods.

(OR)

b) Explain "State as an Agent of Planning and Economic Development".

12.a) Explain the role of Private and Public Mechanism in allocating resources.

(OR)

b) Critically elucidate the Economic theory of Democracy.

13.a) Explain the Keynesian principles of Stabilization Policy.

(OR)

b) Explain the voluntary exchange model of Public Policy.

14.a) Explain the Dolton's principle of Maximum Social Advantage.

(OR)

b) Explain growth and pattern of Public Expenditure.

15. a) Briefly explain the various approaches to Taxation.

(OR)

b) Explain the incidence and shifting of Taxation.

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H.T.NO._____ CODE: ENG104

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Arts

M.A. (English) I Semester Examination, February-2024

ENGLISH LANGUAGE & PHONETICS

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any five of the following questions **(5x4=20 Marks)**

1. What is Formal Communication? How is it different from informal communication?
2. Discuss Speech Mechanism.
3. Write the list of vowels sounds and their symbols.
4. Write a note on Elision.
5. Write a note on Phonology.
6. List out the differences between Animal and Human Communication.
7. Explain Articulatory Phonetics.
8. What are Triphthongs?
9. What are consonant clusters?
10. What is the role of syntax in day to day communication? Illustrate.

Section-B

II. Answer all of the following questions **(5x10=50 Marks)**

11.a) Explain how language is a system of communication describing features of Human communication in detail.

(OR)

b) Explain Non-verbal communication relating to body language.

12.a) What is IPA and explain how it is useful for the classification of Phonemic sounds?

(OR)

b) Discuss varieties of English pronunciation.

13.a) Explain in detail the description of consonant sounds.

(OR)

b) What are the prominent varieties of English Pronunciation? Illustrate.

14.a) Discuss Intonation in detail.

(OR)

b) Discuss the structure of syllable and explain how syllabification is useful in understanding the concept of stress.

15.a) Discuss Morphology in detail. Illustrate.

(OR)

b) Discuss Syntax in detail. Illustrate.

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H.T.NO._____ CODE: CS1004

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc. (Computer Science) I Semester Examination, February-2024

OPERATING SYSTEMS

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any Six of the following questions **(6x5=30 Marks)**

1. Write the I/O Communication Techniques.
2. Define a Process. Specify the Process States.
3. Specify the Principles of Concurrency.
4. Specify the Hardware Support for Mutual Exclusion.
5. What is Paging and Segmentation?
6. Write short note about Virtual Memory.
7. Specify the Organization of I/O Function.
8. What is Disk Cache? Explain.

Section-B

II. Answer all of the following questions **(4x10=40 Marks)**

9.a) What is the functionality of an OS? Describe the commands in any Operating System.

(OR)

b) Define a Process? Explain Process Description and Control.

10.a) Explain the Readers/Writers Problem in Mutual Exclusion.

(OR)

b) Define Deadlock and Starvation. Describe the Principles of Deadlock.

11.a) Discuss in detail about Virtual Memory and its applications.

(OR)

b) Explain Memory Management Requirements.

12.a) What is Disk Scheduling? Describe Any Disk Scheduling Technique.

(OR)

b) Describe UNIX File Management.

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H.T.NO._____ CODE: ZOO104

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc.(Zoology) I Semester Examination, February-2024

GENETICS AND EVOLUTION

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any SIX of the following questions **(6x5=30 Marks)**

1. Pleiotropy
2. Independent assortment
3. Linkage maps
4. Maternal inheritance
5. QTL mapping
6. Insertional mutagenesis
7. Gene Pool and Gene Frequency
8. Convergent evolution

Section-B

II. Answer all of the following questions **(4x10=40 Marks)**

9.a) Write about Co-dominance and Incomplete Dominance with suitable examples.

(OR)

b) What is Genomic Imprinting? Write a short note on penetrance and expressivity and phenocopy.

10. a) What is Recombination? Explain about homologous and non-homologous Recombination.

(OR)

b) Describe about Pedigree Analysis, Karyotype and Genetic Disorders.

11.a) Give a brief explanation on polygenic inheritance and heritability and its measurements.

(OR)

b) What is CRISPR-Cas9 Technology? Write it's applications in Genetic Engineering.

12.a) Write an essay on Hardy-Weinberg Law.

(OR)

b) What is Speciation? Give an account on isolating mechanisms.

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H.T.NO._____ CODE: CHE104

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc.(Chemistry) I Semester Examination, February-2024

ANALYTICAL TECHNIQUES & SPECTROSCOPY-I

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any SIX of the following questions (6x5=30 Marks)

1. Explain the relation between partition ratio and retention time.
2. Explain the principle involved in HPLC.
3. Explain Equivalent and Non-Equivalent protons in ^{1}H-NMR.
4. Explain the application of ^{1}H-NMR in determining Keto-enol tautomerism.
5. Explain the selection rules of Microwave Spectroscopy.
6. Explain the significance of Stokes and Anti-stokes lines in Raman Spectroscopy.
7. Explain the elementary energy levels of Molecules.
8. Explain the application of Beer's Law in determining Dissociation constant of a weak acid.

Section-B

II. Answer all of the following questions (4x10=40 Marks)

9.a) Explain the Principle and Instrumentation of GC along with Detectors used in it.

(OR)

b) Explain the procedure of HPLC assay of Paracetamol and Aspirin.

10.a) What is Chemical shift?. Explain the Factors affecting it with suitable examples.

(OR)

b) Explain the ^{1}H-NMR spectrum of $[HNi(OPEt_3)_4]^+$and $[Pt(acac)_2]$.

11.a) Explain how Rotational spectroscopy used to calculate the Bond length of diatomic molecules.

(OR)

b) Explain the Stereochemical effects on absorption patterns in cis-trans isomerism and hydrogen bonding in Vibrational spectroscopy.

12.a) Evaluate the λ_{max} of Anthracene and Acetophenone using Woodward-Fieser rules.

(OR)

b) Explain how Cis-trans isomerism and cross conjugation evaluated by electronic spectroscopy.

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H.T.NO._____ CODE: PHY104

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc.(Physics) I Semester Examination, February-2024

ELECTRONICS-I

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any Six of the following questions **(6x5=30 Marks)**

1. Write a short note on LED's.
2. Discuss the applications of Triac.
3. What do you understand by Transistor Biasing? What is its need?
4. What is the basic principle of Zener Regular? And explain its working.
5. Write down advantage of Negative feedback in Amplifiers.
6. Explain the operation of tank circuit with neat diagram.
7. Write a short note on Phase Modulation.
8. What are the limitations of Amplitude Modulation?

Section-B

II. Answer the following questions **(4x10=40 Marks)**

9. a) Explain the construction and working of an SCR. **(OR)**

   b) Explain the construction and working of a JFET.

10. a) Explain the single stage RC-Coupled Amplifier and its Frequency Response.

(OR)

   b) Explain the construction and working of Clipping and Clamping circuits.

11.a) Explain the working of Astable Multivibrator with neat circuit diagram.

(OR)

   b) Draw the circuit diagram and explain Phase Shift Oscillator.

12.a) Explain the working of balanced Amplitude Modulator with neat diagram.

(OR)

   b) Explain about FM Discriminator with neat diagram and also state the uses.

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H.T.NO._____ CODE: MCM104

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Commerce

M.Com. I Semester Examination, February-2024

INFORMATION TECHNOLOGY FOR BUSINESS

Time: 2 Hours **Max Marks: 50**

Section-A

I. Answer any five of the following questions **(5x2=10 Marks)**

1. Data Vs. Information.
2. Write the uses of Team Viewer.
3. How to Check Spelling and Grammar in MS-Word?
4. List various types of slides available in MS-PowerPoint.
5. What is Spread Sheet?
6. Write about various types of Cell References.
7. What is Vlookup?
8. Write the uses of Filter option in MS-Excel.
9. What is TDS?
10. What do you mean by Payroll?

Section-B

II. Answer all of the following questions **(5x8=40 Marks)**

11.a) Explain about the impact of Information Technology on Business.

(OR)

b) What is Social Media? How it useful to Business Growth? Explain.

12.a) What is MS-Word? What are the various tabs of MS-Word? Explain.

(OR)

b) What is MS-PowerPoint? How to create the presentations in MS-Power point? Explain with example.

13.a) What is MS-Excel? Write about Worksheet, Workbook, Cell, Cell Pointer, Cell Address and Cell Range.

(OR)

b) What is Function? Explain about different types of functions available in Excel.

14.a) Explain about Conditional Formatting in Excel with suitable example.

(OR)

b) Compare and contrast the various tools available in MS-Excel for conducting "*What-If*- Analysis".

15. a) How to create, alter and display Ledgers in Tally? Explain

(OR)

b) What are the various Accounting Vouchers in Tally? Explain with examples.

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H.T.NO._____ CODE: BLS104

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD

Faculty of Library and Information Science

B.L.I.Sc. I Semester Examination – February-2024

INFORMATION PROCESSING (Practice)-1 (CC)

LIBRARY CLASSIFICATION *(Practice-DDC) 20th Edition*

Exam Duration: 3Hrs Max. Marks: 100

I. Answer any Twenty Titles of the Following Question. 20 x 5 = 100

1. General Libraries ; A Journal
2. Wages of Agriculture Labour
3. Etiquette for Children
4. Ethics of men
5. Alkaloids
6. Sacred Books of Janis
7. Voice President of India
8. Indian ministry of Finance
9. Isotopes of potassium
10. Ministry of Law and Justice of Government of India
11. Standard of living in Indian villages
12. Political conditions in communist countries
13. Book selection in English spiking countries
14. Queen of United Kingdom
15. General statistic of India
16. History of Rajasthan
17. Indo- US trade Agreements
18. Migration from India to the USA
19. Lead poison
20. Democracy in India and USA
21. Rib fractures
22. Bee farming
23. Directory of American Literature
24. History of 20th century American Literature
25. Collection of 20th century Literature
26. Directory of Curricula
27. Protozoan Diseases
28. Banks and Baking
29. Liquid mechanics
30. Life Sciences

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H.T.NO. _____ CODE: ECO105

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD

Faculty of Social Science

M.A. (Economics) I Semester Examination, February-2024

INTERNATIONAL TRADE AND FINANCE

Time: 3 Hours Max Marks: 70

Section-A

I. Answer any five of the following questions. **(5x4=20 Marks)**

1. What is the meaning of opportunity cost in International Trade?
2. Briefly explain the absolute advantage theory of International Trade.
3. Concept of Immiserizing Growth.
4. Concept of intra-industry trade.
5. Net and Gross barter terms of Trade.
6. Factors effecting terms of Trade.
7. Distinguish between Quota and Tariffs.
8. What is the Optimum Tariff and Welfare?
9. Concepts of Balance of Trade and Balance of Payments.
10. Briefly explain fixed and flexible exchange rates.

Section-B

II. Answer all of the following questions **(5x10=50 Marks)**

11.a) Explain the Heckscher-Ohlin theory of International Trade. (OR)

b) Explain the comparative advantage theory of International Trade.

12.a) Discuss the causes of emergence of Intra-Industry Trade. (OR)

b) Explain the Rybczynski theorem of International Trade.

13.a) "Trade as an Engine of Economic Growth" . Explain. (OR)

b) Explain the hypothesis of Secular Deterioration of terms of Trade.

14.a) Explain the concept of optimum tariff with a suitable diagram. (OR)

b) Define Tariffs and explain its types.

15.a) Explain the causes of Disequilibrium in the Balance of Payments.

(OR)

b) Explain Expenditure Reducing and Expenditure Switching Policies.

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H.T.NO._____ CODE: MCM105

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD
Faculty of Commerce
M.Com. I Semester Examination, February-2024
INDIAN ACOUNTING STANDARDS

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any five of the following questions **(5x4=20 Marks)**

1. GAAP
2. FASB
3. AS-2
4. AS-8
5. AS-27
6. AS-32
7. AS-102
8. AS-103
9. AS-108
10. AS-113

Section-B

II. Answer all of the following questions **(5x10=50 Marks)**

11.a) What is Accounting? Explain the concept of Accounting as Information System.

(OR)

b) What is IFRS? Explain its importance and objectives.

12.a) What are the Consolidated Financial Statements? Discuss its scope and presentation process.

(OR)

b) Discuss the accounting for Government Grants and Disclosure of Government Assistance.

13.a) What is Financial Reporting in Hyper Inflationary Economies?

(OR)

b) What is Ind AS-40 and AS-41? Explain.

14.a) What are Non-Current Assets held for Sale and Discontinued Operations?

(OR)

b) What are exploration for and Evaluation of Mineral Resources?

15.a) What is Joint Arrangement and Ind AS-112? Explain.

(OR)

b) What is Regulatory Deferral Accounts and Revenue from contracts with customers? Discuss its importance.

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H.T.No. _____ Code: MAT105

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD

Faculty of Science

M.Sc.(Mathematics) I Semester Examination February-2024

MATHEMATICAL METHODS

Time: 3 Hrs **Max. Marks:70**

SECTION-A

I. Answer any five questions to the following. **5x6=30 Marks**

1. Compute the first three successive approximations of $x' = x^2, x(0) = 1$.
2. Show that Green's function $G(t,s) = \begin{cases} -y(t)z(s)/4 & \text{if } t<s \\ -y(s)z(t)/A & \text{if } t \geq s \end{cases}$ is symmetric.
3. If $u = f(x+iy) + g(x-iy)$, when the functions f and g abe arbitrary, show that $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$.
4. Find the solution of the equation $D^{1^2} z = e^{-x}\cos y$ which tends to zero as $z \to \infty$ has the value $\cos y$ when $z = 0$.
5. Expression $2 - 3x + 4x^2$ in terms of Legendre Polynomial.
6. If $P_n(x)$ is the Legender polynomial for 1^{st} kind then Show that $P_n(x) = \frac{1}{2^n n!}\frac{d^n}{dx^n}(x^2-1)^n$.
7. Express $x^3 + x^2 - 3x + 2$ in term of Hermite Polynomial.
8. Determine $L_0(x), L_1(x), L_2(x), L_3(x)$.

SECTION-B

II. Answer all questions to the following. **4x10=40 Marks**

9. a). State and prove Picard Theorem.

   (OR)

   b). Solve $px + qy = pq$ by using Charpit method.

10. a) By separating variable, find the solution of one dimensional wave equation $\frac{\partial^2 z}{\partial x^2} = \frac{1}{K}\frac{\partial z}{\partial t}$

    (OR)

    b) Show that in spherical polar coordinates γ, θ, ϕ Laplace's equation possesses Solutions ofthe form $\left\{Ar^n + \frac{B}{r^{n+1}}\right\}\theta(\cos\theta)e^{\pm im\phi}$, where A, B, m, and n are constants and $\theta(\mu)$ Satisfies the ordinary differential equation $(1-\mu^2)\frac{d^2\theta}{d\mu^2} - 2\mu\frac{d\theta}{d\mu} + \left\{n(n+1) - \frac{m^2}{1-\mu^2}\right\}\theta = 0$.

11. a) Show that $\int_{-1}^{1} P_n(x)P_m(x)dx = \frac{2}{2n+1}\delta_{mn}$ where $\delta_{mn} = \begin{cases} 0; & m \neq n \\ 1; & m = n \end{cases}$

    (OR)

    b.) Prove that $\sum_{n=-\infty}^{\infty} z^n J_n(x) = e^{x/2}\left(z - \frac{1}{z}\right)$.

12. a). Prove that $H_n(x) = (-1)^n e^{x^2}\frac{d^n}{dx^n}(e^{-x^2})$.

    (OR)

    b) Prove that $\frac{e^{\left(\frac{-xt}{1-t}\right)}}{1-t} = \sum_{r=0}^{\infty} L_n(x)t^r$.

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H.T.NO._____ CODE: CS1005

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc. (Computer Science) I Semester Examination, February-2024

COMPUTER NETWORKS

Time: 3 Hours Max Marks: 70

Section-A

I. Answer any Six of the following questions (6x5=30 Marks)

1. Write short note on HTTP.
2. What do you mean by Network Edge and Network Core?
3. What is Multiplexing and De multiplexing?
4. What are UDP and TCP? Write their functionality.
5. What are Routers? Write their Functionality.
6. Specify different Network Service Models.
7. Write short note on Ethernet.
8. What do you mean by Asynchronous Transfer Mode (ATM)?

Section-B

II. Answer all of the following questions (4x10=40 Marks)

9.a) Define Internet and Protocol. Describe the Access Networks and Physical Media.

(OR)

b) What are the Principles of Application Layer? Explain them.

10.a) Describe the Principles of Reliable Data Transfer in Connectionless Transport.

(OR)

b) What the Services and Principles of Transport Layer? Explain.

11.a) What are Network Service Models? Describe one of them.

(OR)

b) Explain Hierarchical Routing in detail.

12.a) Explain Error Detection and Correction Techniques.

(OR)

b) Describe in detail about IEEE 802.11 LANs.

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H.T.NO.:_____ CODE: BLS105

GIRRAJ GOVERNENT COLLEGE (A), NIZAMABAD

B.L.I.Sc. I SEMESTER EXAMINATION FEBRUARY-2024

INFORMATION PROCESSING (PRACTICE)-II (CC)

LIBRARY CATALOGUING (PRACTICE) – AACR-2R –MONOGRAPHS & SERIALS

Exam Duration: 3Hrs **Max Marks 100**

I. Answer any Five Titles of the Following Questions **5 x 20 = 100**

TITLE 01 **INTRODUCTION TO DIGITAL TECHONOLOGY**

Third Edition

Louis Nashelsky

Professor, Department of Electrical and Computer Technology

Queens borough Community College of the City University of New York

John Wiley and Sons

New York Chic ester

Brisbane Toronto

Singapore

Other Information

Call No. 621.381958 NAS

Accession No. 14914

Pages vii, 536

Date of application of the third ed. 1983

Size 23 cm.

ISBN Not given

Other Information given on the back of the title page: Rev. ed. Of Introduction to digital computer technology, 2nd ed. 1977

TITLE 0 2.

William N. Dember Joel S. Warm

PSYCHOLOGY OF PERCEPTION

Second Edition

Holt, Rinehart and Winston

New York Chicago San Francisco

Other Information

Call No. 152.1 DEM

Accession No 5302

Pages viii, 536

Date of Publication of the Second ed. 1979

Size 24cm.

ISBN Not given

TITLE 03.

PRINCIPLE OF PSYCHOLOGY
Richard H Price
University of Michigan , Annn Arbor
Mitehell Glickstein
Broun University
David L. Horton
University of Maryland
Roals H. Bailey
Holt, Rinehard and Winston
New York, Chicago, San Francisco.

Other Information
Call No. 150/PRI
Accession No 5819
Pages xvii, 650
Date of Publication 1982
Size 26cm.
ISBN 0-03-048411-1

TITLE 04

ARTIFICIAL INTELLIGENCE
The Case Against
Edited by
Rainner Born
Croom Helm
London & Sydney

Other Information
Call No. 0001.535/ART
Accession No 8245
Pages xxxv, 220
Date of Publication 1987
Size 23cm.
ISBN 0-7099-3293-6

TITLE 05

THE GIFT OF MAGI
BY
O.HENRY
ILLUSTRATED BY
ERIL BLEGVAD
HAWTHORN BOOKS
NEW YORK

Other Information
Call No. 813.52/HEN
Accession No 3011
Pages 29
Date of Publication 1972
Size 17cm.
There are few illustrations
Note: The actual name of O.Henry is William Sydney Porter, However, the author is predominantly know by his pseudonym

TITLE 06

AN OUTLINE OF STATISTICAL THEORY
Volume One
(Probability and Probability Distribution)
A.M.GOON
M.R. GUPTHA
B.DASGUPTA
CALCUTTA
THE WORLD PRESS PRIVATE LIMITED 1985

Other Information
Call No. 310/GOO
Accession No 15492/93
Pages XIV, 516, XV,551
Size 22cm.
Note: The book is in two volumes with the common title **An Outline of Statistical theory.**
Title of volume **2 is Statistical Inference**

TITLE 07

AMERICAN JOURNAL OF MATHEMATICS
Founded by the Johns Hopkins University
Edited by
J.H. SAMPSON
(and several others)
Published under the Auspices of the Johns Hopkins University
with the Editorial Cooperation of American Mathematical Society.
Volume 110, Number 5
October 1988
The Johns Hopkins University Press Baltimore, Maryland
U.S.A.

Other Information
Call No. : 510.5
Size : 26cm.
Date of 1 st issue: 1879
Periodicity :Six issues a year
Library lacks Vols.1-68

TITLE 08

THE LAW QUARTERLY REVIEW
VOL. 105 APRIL 1989
Stevens & Sons Ltd
LONDON

Other Information
Call No. : 340.05/LAW
Size : 25cm.
Date of 1 st issue: 1885
ISSN No. : 0023 -933 x
The Library holdings is : Vol. 52(1937) to Vol. 57(1942) Vol.65 (1950)

HTNO._____ CODE: ECO101

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD

Faculty of Social Science

M.A. (Economics) I Semester Examination, February-2024

MICRO ECONOMICS ANALYSIS

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any five of following questions. **(5x4=20 Marks)**

1. Briefly explain the Partial Equilibrium Analysis.
2. Normative Economics
3. Compensated Demand Curve.
4. Cross and Income Elasticity Demand.
5. A brief note on Least-Cost Combinations of Factors.
6. Explain any three types of Internal Economies.
7. Long-run Equilibrium of the firm under the Perfect Competition Market.
8. Features of Monopoly.
9. Write a short note on Bilateral Monopoly.
10. Features of Oligopoly.

Section-B

II. Answer all of the following questions **(5x10=50 Marks)**

11.a) What is Deductive Method of Analysis? Explain its merits and demerits.

(OR)

b) Critically explain Robbin's definition of Economics.

12.a) Explain the Paul Samuelson's Revealed Preference theory of Demand.

(OR)

b) What is Price Elasticity of Demand? Explain the measurement of Price Elasticity of Demand at a point on Demand Curve.

13.a) Explain the Constant Elasticity of Substitution production function.

(OR)

b) What is Cobb-Douglas Production Function? Explain its essential features.

14.a) Define Price Discrimination. Explain the degrees of Price Discrimination.

(OR)

b) How are Price and Output determined under Monopoly? Explain.

15. a) What is meant by Excess Capacity? What are the causes of excess capacity under Monopolistic Competition? (OR)

b) Explain Sweezy's Kinked Demand Curve Model of Oligopoly. How does it explain price rigidity under oligopoly?

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HT.NO._____ CODE: CHE101

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD
FACULTY OF SCIENCE
M.Sc. (Chemistry) I SEMESTER FEBRUARY-2024
INORGANIC CHEMISTRY

Time: 3 hrs **Max.Marks:70**

SECTION-A

I. Answer any six of the following **6x5=30**

1.Discuss the Plane of Symmetry with suitable examples.

2.Write Symmetry elements present in NH_3 Molecule.

3. Write the salient features of Crystal Field Theory (CFT).

4.Discuss the John-Tellar distortion in Octahedral Complexes.

5.Describe the trends in stepwise formation constants of metal complexes.

6. Write a brief account on factors influencing the stability constants.

7.Explain 18 Valence Electron Rule.

8. Draw the MOED diagram for CO Molecule.

SECTION-B

II. Answer the following **4x10=40**

9. (a).Explain the Symmetry elements with suitable examples.

Or

b) Describe the symmetry criteria for optical activity.

10.a) Explain the Guoy's Method for determination of magnetic moment.

Or

b) Explain the factors influencing the magnitude of crystal field splitting in octahedral complexes.

11. a) Explain the Determination of stability constants by spectrometric method.

Or

b) Explain the Pearson's theory of Hard and Soft Acids and Bases.

12.a) Explain the structures and bonding modes in Ru(II) and Mo(0) di nitrogen Complexes.

Or

b) Draw the neat sketch of MOED for NO and describe its donor and acceptor Molecular Orbitals.

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HT.NO._____ CODE: BLS101

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD
FACULTY OF LIBRARY AND INFORMATION SCIENCE
B.Li.Sc. I SEMESTER FEBRUARY-2024
LIBRARY AND SOCIETY (CC)

Time: 3 hrs **Max.Marks:70**

Section – A

I. Answer any five of the following: **5x4=20**

1. Librarianship
2. User Studies
3. CAS
4. Indexing
5. Library Consortia
6. Library Cooperation
7. IFLA
8. ALSD
9. Copyright
10. Library Act

Section – B

II. Answer the following: **5x10=50**

11.a) Describe the functions of the library and its role in Formal and Informal Education. (OR)
b) What is User Education? How is it important in the Library?

12. a) What are the five laws of library science and write its implications with examples. (OR)
b) What are the types of Libraries? And describe their services.

13.a) Write an essay on library movement in India. (OR)
b) Library movement in Telangana State.

14.a). Indian Library Association ILA. (OR)
b). Programs and activities of NISCAIR.

15.a). Library Legislation need, purpose and advantages in India.
(OR)
b). Write an essay on Intellectual Property Rights.

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HTNO:_____ CODE: ENG101

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD

Faculty of Arts

M.A. (ENGLISH) I Semester Examination, February-2024

THE ENGLISH LANGUAGE: HISTORY, STRUCTURE AND DESCRIPTION

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any five of the following questions (5x4=20 Marks)

1. Who introduced Bow-wow theory? What is it modelled on?
2. The Gesture Theory.
3. Is the Middle English important in the English Language history? How?
4. Define Pronunciation. Give Examples.
5. What is word formation? Is it important? Why?
6. Does word formation affect change of meaning? How?
7. What is a Noun Phrase? What are its functions?
8. Explain Verb Phrase with examples.
9. What is a Dialect?
10. What is Slang?

Section-B

II. Answer all of the following questions (5x10=50 Marks)

11. a) Draw a diagram to show the Indo-European Family of Languages and its branches.

(Or)

b) Write the important features of Old English in detail.

12. a) What is Norman conquest? What major changes does it bring? Explain.

(Or)

b) What are the General Characteristics of the Modern English?

13.a) What are the Different Processes of Word Formation? Explain.

(Or)

b) What are the three stages of the evolution of English Language? Explain the distinct influences that resulted during the evolution with examples.

14.a) Define Simple Sentence. Explain its types, constituents and organization.

(Or)

b) Explain the structure of the English Verb Phrase with examples.

15.a) What is an Idiolect? What are the differences between a Dialect and an Idiolect? Give few examples.

(Or)

b) Write the major differences between British English and American English in a table format.

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HT.NO._____ CODE: MCM101

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Commerce

M.Com. I Semester Examination, February-2024

ORGANIZATIONAL THEORY AND BEHAVIOUR

Time: 3 Hours Max Marks: 70

Section-A

I. Answer any five of the following questions **(5x4=20 Marks)**

1. Define the term 'Organisation'.
2. Features of Personality.
3. Concept of Organizational Behaviour.
4. Role of Formal Organization Structure.
5. How does perception affect individual behaviour within an organisation?
6. Define 'Group Cohesiveness'
7. Importance of Motivation.
8. Managerial Grid.
9. Concept of Organisational Effectiveness.
10. Why people resist change?

Section-B

II. Answer all of the following questions **(5x10=50 Marks)**

11.a) Explain the Modern Organizational Approaches.

(OR)

b) Compare and contrast classical organisational theory with Neo-classical Organisation Theory.

12.a) Explain the contingent factors that influence organisational design.

(OR)

b) Describe the features of Good Organizational Structure.

13.a) Describe the factors affecting Group Cohesiveness.

(OR)

b) Evaluate the positive and negative aspects of group decision making and suggest techniques for improvement.

14.a) Analyse Maslow's need hierarchy theory.

(OR)

b) Enumerate factors influencing morale.

15.a) Explain the process of overcoming resistance to change.

(OR)

b) Discuss the functions and dysfunctions of organisational culture.

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HT.NO._____ CODE: BOT101

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc. (BOTANY) I Semester Examination, February-2024

PHYCOLOGY

Time: 3 Hours **Max Marks: 70**

SECTION -A

I Answer any SIX of the following questions **6x5=30 marks**

1. Terrestrial Algae
2. Reserve Food Material
3. *Closterium*
4. *Lyngbya*
5. *Padina*
6. *Cyclotella*
7. Fossil algae
8. Algal blooms

SECTION - B

II Answer all of the following questions **4x10= 40 Marks**

9. a) Discuss Fritsch system of classification of Algae.

OR

b) Write an account on sexual reproduction in Algae giving suitable examples.

10.a) Describe the life history of *Hydrodictyon* with the help of neatly labelled diagrams.

OR

b) Write the characteristic features of class Cyanophyceae.

11.a) Enumerate the characteristic features of class Xanthophyceae and describe the life history of *Botrydium.*

OR

b) Describe the life history of *Laminaria* with the help of neatly labelled diagrams.

12.a) Give a detailed account on Algal Biofertilizers.

OR

b) Write an account on Economic importance of Algae.

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H.T.NO._____ CODE: PHY101

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc. (Physics) I Semester Examination, February-2024

MATHEMATICAL PHYSICS AND NUMERICAL METHODS

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any Six of the following questions **(6x5=30 Marks)**

1. Find the Legendre Polynomials $P_n(x)$, *prove that* $P_n(1) = 1$.
2. For Hermite's polynomials $H_n(x)$, prove that $H_n(-x) = (-1)^n H_n(x)$.
3. Show that the Fourier transform of $f(at) = \frac{1}{a} g(\frac{w}{a})$
4. What is Laplace Transform and write its properties.
5. Find real root of the equation $f(x) = x^3 - x - 1 = 0$ by using Bisection method.
6. Using Simpson - 1/3 Rule with h=0.25, evaluate integral $I = \int_0^2 \frac{dx}{x^3+x+1}$.
7. Show that the transformations of tensors form a group.
8. Define Contravariant, Covariant and Mixed Tensor.

Section-B

II. Answer the following questions **(4x10=40 Marks)**

9.a) Write and solve the Legendre differential equation to obtain Legendre functions. (OR)

b) For Hermite polynomials prove that $\int_{-\infty}^{+\infty} e^{-x^2} H_n(x) H_m(x) dx = 2^n \sqrt{\pi \delta_{mn}}$

10. a) What is meant by Fourier transform? State and prove convolution theorem for Fourier transform. (OR)

b) State and prove Convolution theorem using convolution theorem find the inverse Laplace transform of $\frac{4}{s^2(s-2)}$.

11.a) i) Explain the Newton-Raphson method to find Multiple Roots.

ii) Find the Newton-Raphson iterative formula for the function $f(x) = x^2 - 2x - 1 = 0$

(OR)

b) Compute the values of y(0.1) and y(1.2) using Taylor's series method for the solution of the problem $y^{II} - xy^{I} - y = 0,\ y(0) = 1\ and\ y^{I}(0) = 0$

12.a) Using the Muller method, find the root between 2 and 3 of the equation $x^3 - 2x - 5 = 0$

(OR)

b) What are Christofell's Symbols? How can they be determined in terms of metric covariant tensor? Deduce the transformation rules for these symbols.

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H.T.No._____ Code: MAT101

GIRRAJ GOVT. COLLEGE(A), NIZAMABAD

Faculty of Science

M.Sc. (Mathematics) I Semester Examination February-2024

ALGEBRA

Time: 3 Hrs **Max. Marks 70**

SECTION-A

I. Answer any Six questions to the following. **6x5=30 Marks**

1. Prove that the center Z(G) of a group G is a Normal Subgroup.
2. Prove that Every finite group has a Composition Series.
3. Show that the Group Z/(10) is a Direct sum of $H = \{0, 5\}$ and $K = \{0,2,4,6,8\}$.
4. Let G be a group of order pq, where p and q are prime numbers such that $p >$ q and $q \nmid (p - 1)$. Then prove that Gis cyclic.
5. Let $(A_i), i \in \Lambda$ be a family of right (left) ideals in a ring R. Then $\bigcap_{i\in\Lambda} A_i$ is also a right (left) ideal.
6. Prove that Every Euclidean domain is a Principal Ideal Domain (PID).
7. Prove that '$\sim$' is an equivalence relation.
8. Prove that in any ordered ring R all squares of nonzero elements are positive.

SECTION-B

II. Answer all questions to the following. **4x10=40 Marks**

9. a) State and prove first isomorphism theorem for groups.

   (OR)

   b) Let G be a nilpotent group. Then every subgroup of G and every homomorphic image of G are nilpotent.

10. a) State and prove Second and Third Sylow theorems.

    (OR)

    b) State and prove Cauchy's theorem for Abelian Groups.

11. a) State and prove fundamental theorem of Homomorphism.

    (OR)

    b) If R is a nonzero ring with unity I, and I is an ideal in R such that $I \neq R$. Then prove that there exists a maximal ideal M of R such that $I \subseteq M$.

12. a) Let R be an Integral Domain. Then R is a right Ore domain jf and only there exists a division ring Q such that (i) R is a subring of Q.

    (ii) Every element of Q is of the form ab^{-1} for some $a, b \in R$.

    (OR)

    b) Let M be afinitely generated free module over a commutative ring R. Then prove that all bases of M have the same number of elements.

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H.T.NO._____

CODE: CS1001

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc. (Computer Science) I Semester Examination, February-2024

DISCRETE MATHEMATICS

Time: 3 Hours **Max Marks: 70**

Section-A

I. Answer any Six of the following questions (6x5=30 Marks)

1. Write the Truth Table for the connectives used in Propositional Logic.
2. Explain the Rule of Inference.
3. Specify the Applications of Congruence.
4. Prove that the set G={1, -1,i,-i} is a group under multiplication.
5. Define a partial ordering with example.
6. How many different words can be formed with the letters of the word "MISSISSIPPI".
7. Define Isomorphism.
8. Explain Graph Coloring.

Section-B

II. Answer all of the following questions (4x10=40 Marks)

9.a)(i) Explain the terms Universal Quantifiers and Existential Quantifiers with examples.
(ii) If $(P \rightarrow Q) \wedge (P \wedge R)$ is given to be false. Find the truth values of P,Q and R.

(OR)

b) (i) Show that $(P \vee (Q \wedge R) \leftrightarrow (P \vee Q) \wedge (P \vee R)$ is a tautology.
(ii) If $(P \rightarrow Q) \wedge (P \wedge R)$ is given to be false. Find the truth values of P,Q and R.

10. a) Define Recursion. Explain Recursive Algorithms with an example.

(OR)

b) Explain basic concepts of Set Theory and Set Operations.

11.a) There are six men, five women in a room. Find the number of ways four persons can be drawn from the room if (i) they can be male or female (ii) two must be men and two women (iii) they must all are of same sex.

(OR)

b) Show that the Relation R={(x,y): x-y is Divisible by n (n>1)} defined in the set of positive integers M. where n,x,y ε M is a Equivalence Relation.

12.a) Define a Graph. Write the Types of Graphs. Show that a connected graph G is a tree iff there exists exactly one path between every pair of vertices in G.

(OR)

b) Define Trees. Write the properties of Trees. Explain Tree Traversals.

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HT.NO._____ CODE: ZOO101

GIRRAJ GOVT. COLLEGE (A), NIZAMABAD

Faculty of Science

M.Sc. (ZOOLOGY) I Semester Examination, February-2024

BIOSYSTEMATICS, STRUCTURE AND FUNCTION OF INVERTEBRATES

Time: 3 Hours **Max Marks: 70**

SECTION -A

I Answer any SIX of the following questions **6x5=30 marks**

1. Taxonomic Hierarchy.
2. Nomenclature.
3. Gills.
4. Feeding in Metazoan.
5. Coelomoducts.
6. Nephridia.
7. Minor Phyla
8. Respiratory pigments.

Section-B

II. Answer all of the following questions **(4x10=40 Marks)**

9.a) Write a note on basic principles of methods of Taxonomy. (OR)

b) Define species and describe different concepts of Species.

10.a) Describe filter feeding in Polychaeta.

(OR)

b) Write about the organs of Respiratory System.

11.a) Write brief notes on the nervous system in Arthropods.

(OR)

b) Write an essay on mechanism of excretion with Nephridia.

12.a) Write about the Crustacean Larval Forms.

(OR)

b) Write general organisation and affinities of Chaetognatha.

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