

SR&BGNR GOVERNMENT ARTS & SCIENCE COLLEGE (A), KHAMMAM
DEPARTMENT OF PHYSICS

List of Practicals for UG students

S.No.	Name of the Practical	Semester
1.	Study of Compound Pendulum, Determination of 'g' & 'k'	I
2.	Young Modulus of material by Uniform Bending	I
3.	Young Modulus of material by Non-Uniform Bending	I
4.	Moment of Inertia of Fly Wheel	I
5.	Measurement of Errors – Simple Pendulum	I
6.	Rigidity Modulus of Wire Material by Torsion Pendulum	I
7.	Co-efficient of Thermal Conductivity of a Bad Conductor by LEE's Method	II
8.	Measurement of Stefan's Constant	II
9.	Heating Efficiency of Electrical Kettle with varying Voltage	II
10.	Thermal expansion of Solids	II
11.	Specific Heat of Solids – Graphite	II
12.	Verification of Norton's Theorem	III
13.	Verification of Thevinin's Theorem	III
14.	Verification of Superposition Theorem	III
15.	Verification of Maximum Power Transfer Theorem	III
16.	Determination of Small Resistance by Carey Foster's Bridge	III
17.	Thickness of a wire using wedge method	IV
18.	Radius of Curvature of a convex lens using Newton's Rings	IV
19.	Study of optical rotation – Polarimeter	IV
20.	Dispersive power of a prism	IV
21.	Refractive index of glass & Liquid – Boy's method	IV
22.	Refractive index of Liquid – Pulfrich refractometer	IV
23.	Wavelength of Laser –Diffraction grating	IV

24	Determination of Planck's constant using LEDs of 4 different colours	V
25	Determination of wavelength of Laser using diffraction by single slit	V
26	Determination of wavelength of Laser using diffraction by double slit	V
27	Photocell – Determination of Planck's constant	V
28	Verification of inverse square law – photoelectric effect	V
29	Energy gap of intrinsic semiconductor	V
30	Construction of Logic gates with discrete components	VI
31	Verification of truth tables – AND, OR, NOT gates	VI
32	Construction of NAND, NOR gates with discrete components	VI
33	Zener diode VI characteristics	VI
34	Zener diode as a voltage regulator	VI

SR&BGNR GOVERNMENT COLLEGE (AUTONOMOUS), KHAMMAM

B.Sc, CHEMISTRY-SEMESTER WISE PRACTICAL SYLLABUS

SEMESTER-I

Paper- I : Qualitative analysis-Semi micro analysis of salt mixtures (two cations and two anions)

SEMESTER-II

Paper-II : Quantitative analysis

1. Acid-Base Titrations

- (a) Estimation of Carbonate in washing soda
- (b) Estimation of Bicarbonate in Baking soda
- (c) Estimation of Carbonate and Bi-carbonate in the mixture

2. Redox Titrations

- (a) Determination of Fe(II) using $K_2Cr_2O_7$
- (b) Determination of Fe(II) using $KMnO_4$ with sodium oxalate as primary standard
- (c) Determination of Cu(II) using $Na_2S_2O_3$ with $K_2Cr_2O_7$ as primary standard

SEMESTER-III

Paper-III : Synthesis of Organic compounds

- 1. Acetylation
- 2. Aromatic Electrophilic Substitution
- 3. Halogenation
- 4. Oxidation
- 5. Esterification
- 6. Methylation
- 7. Condensation
- 8. Diazotisation

SEMESTER-IV

Paper-IV : Qualitative analysis of organic compounds

Identification of organic compounds through the functional group analysis

SEMESTER-V

Paper-V

1. Distribution Law

- (a) Determination of molecular status and partition co-efficient of benzoic acid in Toluene and water.
- (b) Determination of distribution co-efficient of acetic acid between n-butanol and water.

2. Electrochemistry

- (a) Determination of cell constant of a conductivity cell
- (b) Verification of Ostwalds dilution's law- Determination of dissociation constant(K_a) of acetic acid by conductivity measurements.

3. Colorimetry

- (a) Verification of Beer's law using $KMnO_4$
- (b) Determination of the concentration of the given $KMnO_4$ solution

4. Physical constants

- (a) Demonstration experiments on Surface tension and Viscosity of liquids

SEMESTER-VI

Paper-VI

1. Kinetics

- (a) Determination of specific reaction rate of the hydrolysis of methyl acetate catalyzed by hydrogen ion at room temperature.
- (b) Determination of rate of decomposition of hydrogen peroxide catalyzed by $FeCl_3$

2. Electrochemistry

(A). Potentiometry

- (a) Determination of redox potential of $\text{Fe}^{+2}/\text{Fe}^{+3}$ by potentiometric titration of ferrous ammonium sulphate Vs Potassium dichromate.
- (b) Precipitation titration of KCl Vs AgNO_3 - Determination of the concentration of the given silver nitrate.

(B) P^H-metry

- (a) P^H metric Titration of Strong acid Vs Strong Base
- (b) P^H metric Titration of Weak acid Vs Strong Base

3. Conductometry

- (a) Determination of Overall order : Saponification of ethyl acetate with NaOH by conductance measurements

SR&BGNR Govt. Arts and Science College(A) Khammam
Department Of Zoology
Experiments Details

I Semester	
1	Study of museum Slides/ Specimens and models of invertebrates
2	Demonstration of Virtual Dissections.

II Semester	
1	Study of museum Slides/ Specimens and models of vertebrates
2	Osteology-Axial skelten & Appendicular skelten
3	Demonstration of Virtual Dissections.

III Semester	
S.No	Name of the Experiment
1	Identification of Carbohydrates
2	Identification of Proteins
3	Identification of Fats
4	Identification of Ammonia
5	Identification of Urea
6	Identification of Uric acid
7	Effect of pH and Temperature on Salivary amylase
8	Estimation of Haemoglobin by Sahli's method
9	Estimation of Blood clotting time
10	Estimation of total Protein by Biuret method

IV Semester	
1	Preparation of slides of mitotic divisions.
2	Preparation of Stages of meiosis.
3	Problems on Genetics
4	Study of TS of Testis and Ovary
5	Study of different stages of Cleavages
6	Different stages of mitosis and meiosis.
7	Identification of Lampbrush and Polytene chromosomes

V Semester	
1	Identification of Blood grouping
2	Demonstration of Precipitation
3	Enumeration of Total RBC
4	Enumeration of Total WBC
5	Enumeration of differential count of WBC
6	Identification of Vectors
7	Identification of Transgenic animals

VI Semester	
1	Determination of pH of Soil and Water
2	Estimation of Salinity
3	Estimation of Carbonates and Bicarbonates.
4	Estimation of Dissolved Oxygen
5	Identification of Zooplanktons.
6	Study of Pond Ecosystem
7	Study of Endangered and Threatened wild animals
8	Identification of Zoogeographical realms.
9	Museum study of fossil animals.
10	Study of Homology and Analogy
11	Problems on Hardy Weinberg law
12	Macro evolution using Darwin finches(Pictures)

SR & BGNR GOVT. ARTS & SCIENCE COLLEGE (A), KHAMMAM

DEPARTMENT OF MICROBIOLOGY

PRACTICAL'S LIST

S.NO	Topic	Semester
1.	Compound microscope and its handling	Semester-I
2.	Sterilization techniques: Autoclave, Hot air oven	Semester-I
3.	Simple and differential staining (Gram staining), Spore staining	Semester-I
4.	Bacterial motility: hanging drop method	Semester-I
5.	Preparation of culture media: Solid/liquid	Semester-I
6.	Isolation of bacteria by serial dilution and pure cultures methods (streak, spread and pour plate techniques)	Semester-I
7.	Setting up of Winogradsky's column	Semester-II
8.	Turbidometric measurement of bacterial growth curve	Semester-II
9.	Factors affecting bacterial growth – pH, temperature, salts	Semester-II
10.	Colorimetry- Principles, laws, determination of absorption maxima	Semester-II
11.	Paper chromatography- separation of sugars/amino acids	Semester-II
12.	Determination of blood groups and Rh typing.	Semester-III
13.	Estimation of blood haemoglobin	Semester-III
14.	Differential staining of WBC by	Semester-III

	Leishman's stain	
15.	RBC count	Semester-III
16.	WBC count	Semester-III
17.	Antibiotic sensitivity testing- disc diffusion method.	Semester-III
18.	Estimation DNA by diphenylamine (DPA) method.	Semester-IV
19.	Estimation of RNA by orcinol method	Semester-IV
20.	Study of cell division in onion root tip (mitotic divisions)	Semester-IV
21.	Microbial fermentation for the production and estimation of citric acid.	Semester-V
22.	Microbial fermentation for the production and estimation of ethanol	Semester-V
23.	Determination of the microbiological quality of milk sample by MBRT	Semester-V
24.	Isolation of fungi from spoilt bread/fruits/vegetables.	Semester-V
25.	Preparation of yogurt.	Semester-V
26.	Determination of Biochemical Oxygen Demand (BOD) of sewage water	Semester-VI
27.	Bacteriological examination of water using multiple tube fermentation test: presumptive test, confirmed test and completed coli form test	Semester-VI

SR & BGNR GOVT. ARTS AND SCIENCE COLLEGE (A), KHAMMAM

DEPT. OF BOTANY

LIST OF PRACTICALS PERFORMING IN THE DEPT. LABS

SNO	NAME OF THE EXPERIMENT	SEMISTER
1	Identification of Algal mixture	Sem I
2	Gram staining of bacteria	Sem I
3	Section cutting of lower plants	SemI
4	Section cutting of diseased plant material	SemI
5	Section cutting of Hydrophytes and xerophytes	SemII
6	Section cutting of Gymnosperms	SemII
7	Herbarium Preparation	Sem II
8	Preparation of double stained anatomical slides	SemIII
9	Identification of Stomata	Sem III
10	Pollen viability test	SemIII
11	Study of Cell divisions (Mitosis and Meiosis)	Sem IV
12	Determination of Osmotic potential	SemIV
13	Determination of rate of transpiration	Sem IV
14	Determination of stomatal frequency	Sem IV
15	Separation of pigments by paper chromatography	Sem IV
16	Estimation of Proteins	Sem IV
17	Study of plant communities	Sem V
18	Demonstration of tissue culture techniques	SemVI
19	Production of synthetic seeds	SemVI

**DEPARTMENT OF
COMPUTER SCIENCE & APPLICATIONS**

Lab Question Bank

List

Sno	Course	Semester	Lab Question Paper
1	B.Sc(M)	I	Programming in C
2	B.Sc(M)	II	Programming in C++
3	B.Sc(M)	III	Data Structures Using C++
4	B.Sc(M)	IV	Database Management System
5	B.Sc(M)	V	Programming in Java
6	B.Sc(M)	VI	Wbtechnologies
7	B.Sc(B)	I	Programming in C
8	B.Sc(B)	II	Programming in C++
9	B.Sc(B)	III	Relational database management system
10	B.Sc(B)	IV	Multimedia systems
11	B.Sc(B)	V	Programming in Java
12	B.Sc(B)	VI	Wbtechnologies
13	BA(CA)	I	Programming in C
14	BA(CA)	II	Programming in C++
15	BA(CA)	III	Relational database management system
16	BA(CA)	IV	Multimedia systems
17	BA(CA)	V	Programming in Java
18	BA(CA)	VI	Wbtechnologies
19	B.com(CA)	I	FIT
20	B.com(CA)	II	Programming with C++
21	B.com(CA)	III	Relational database management system
22	B.com(CA)	IV	Wbtechnology
23	B.com(CA)	V	E-Commerce
24	B.com(CA)	VI	Cyber security

Department of Biotechnology
SR & BGNR arts and science college (A)

List of practical's

Practical Paper – I (SEMESTER-1)

1. Identification of plant, fungi, bacteria and animal cells.
2. Preparation of different stages of Mitosis from onion root tips
3. Preparation of different stages of Meiosis from grass hopper testis
4. Preparation of polytene chromosomes from *Drosophila* salivary gland.
5. Monohybrid and dihybrid ratio in *Drosophila*
6. Monohybrid and dihybrid ratio in maize
7. Problems on codominance, epistasis, two point and three point test cross, gene mapping
8. Statistical applications of hardy weinberg equilibrium

Practical paper-II (SEMESTER-II)

1. Preparation of molar and molal solutions
2. Preparations of buffers (acidic, basic, neutral)
3. Qualitative tests of sugars, amino acids and lipids
4. Estimation of total sugars by Anthrone method
5. Separation of amino acids by Paper chromatography
6. Estimation of protein by biuret method
7. Sterilization methods
8. Preparation of microbiological media (bacterial, algal and fungal)
9. Isolation of bacteria by streak, spread and pour plate methods
10. Isolation of bacteria from soil
11. Simple staining and differential staining (gram staining)
12. Bacterial growth curve

13. Technique of micrometry (ocular and stage)

Practical paper –III (SEMESTER-III)

1. Isolation of DNA from plant, animal/bacterial cells
2. Isolation of plasmid DNA
3. Analysis of DNA by agarose gel electrophoresis
4. Restriction digestion of DNA
5. PCR
6. Competent cell preparation, transformation and selection.

Practical paper-IV (SEMESTER-IV)

1. Finding statistical significance of a given data using chi – square test.
2. Graphical representation of data (Histograms, frequency polygon, Pie diagram)
3. Acquaintance with the Biological databases through Internet
4. Acquaintance of nucleic acid databases
5. Acquaintance of protein databases
6. Micro soft Power point presentation
7. Preparation of document using Microsoft word
8. Preparation of Microsoft excel sheets

Practical paper –V (SEMESTER-V)

1. Preparation of medium for tissue culture. (MS or B5)
2. Sterilization methods of explants (seed leaf, inter node & root), medium
3. Establishment of callus cultures –from carrot.
4. Cell suspension cultures.
5. Protoplast isolation and culture.
6. Synthetic seed production.

Practical paper VI - (SEMESTER-VI)

1. Estimation of BOD in water samples
2. Estimation of COD in water samples
3. Estimation of total dissolved solid in water samples
4. Isolation of microorganisms from soil/industrial effluents
5. Production of biogas using cow/cattle dung
6. Bioremediation