

VOCATIONAL BRIDGE COURSE

PHYSICS I Year

PRACTICALS

(1) Vernier Callipers:

Find the volume of a given brass/steel sphere using vernier callipers.

(2) Screw Gauge:

Find the thickness of a given glass plate using screw gauge.

(3) Simple Pendulum:

Find the acceleration due to gravity at your place using simple pendulum.

(4) Concurrent forces:

Verify the parallelogram law of forces and find the weight of a given stone in air using the parallelogram law (Take 2 observations in each case)

(5) Force constant of a spring:

Find the force constant of a given helical spring by the method of oscillation using different suspension weights. (Take 3 observations in each case)

(6) Apparent expansion of liquid:

Determine the coefficient of apparent expansion of a given liquid using specific gravity bottle. (Mass need not be calculated to correct upto milligram) **[DELETED]**

(7) Boyle's Law:

Plot $h - \frac{h}{2}$ graph using Boyle's law apparatus (or) quill tube apparatus. Find the atmospheric pressure from the graph.

(8) Specific Heat of a Solid:

Find the specific heat of the given solid by using principle of method of mixtures. (Mass need not be calculated to correct upto milligram).

VOCATIONAL BRIDGE COURSE

PHYSICS II Year

PRACTICALS

(9) Velocity of Sound

Determine the velocity of sound in air at room temperature using resonance / apparatus. (Use two tuning forks of different frequencies)

(10) Determination of Focal Length of a Concave Mirror

Determination the focal length of a given concave mirror by u-v method. **[DELETED]**

(11) Determination of Focal Length of a Convex Lens

Determine the focal length of a given convex lens by u-v method.

(12) Mapping of Magnetic field lines - Locating Null points

Draw the magnetic field lines in the combined magnetic field due to the earth and the bar magnet placed in the magnetic meridian with its North pole pointing towards geographical North. Locate Null points and calculate the Magnetic Moment of the given magnet. (Horizontal component of earth's Magnetic field = 0.38×10^{-4} Tesla)

(13) Ohm's Law - Verification

Verify Ohm's Law using R-Cot & graph method. (Take 6 observations)

(14) Meter Bridge - Determination of Specific Resistance

Find the specific resistance of a given wire using meter Bridge.

(15) Junction Diode - Characteristics

Draw Current - Voltage (I-V) characteristics of a junction diode (Take at least 6 observations)

(16) Transistor Characteristics

Draw characteristics of common emitter n-p-n (or p-n-p) transistor configuration and find the input resistance and output resistance from them). **[DELETED]**

VOCATIONAL BRIDGE COURSE

CHEMISTRY

PRACTICALS

Model Question Paper with Scheme of Valuation

Time: 1½ Hours

Max. Marks: 25

I. Qualitative Analysis	10 Marks
1. Physical state, colour and Actions of heat	(½ + ½ + 1 = 2 Marks)
2. Identification of Anion	2 Marks
3. Confirmation test for Anion	2 Marks
4. Identification test of cation	2 Marks
5. Confirmation test for cation	1 Marks
6. Report	1 Marks
II. Titrimetric Analysis (Volumetric Analysis)	10 Marks
1. Procedure in the first 10 mts with equation	2 + 1 = 3 Marks
2. Titration and Tabulation with values	4 Marks
3. For indicating the formula	1 Mark
4. For calculation and Report	2 Marks
III. Record	5 Marks
Total:	25 Marks

VOCATIONAL BRIDGE COURSE

CHEMISTRY

PRACTICALS

Question Bank for Qualitative Analysis

S.No. Salt Name

1. Aluminum Nitrate, $\text{Al}(\text{NO}_3)_3$ **[DELETED]**
2. Ammonium carbonate, $(\text{NH}_4)_2\text{CO}_3$
3. Barium Bromide, BaBr_2
4. Calcium chloride, CaCl_2 **[DELETED]**
5. Copper sulphate, CuSO_4
6. Ferrous sulphate, FeSO_4
7. Lead Nitrate, $\text{Pb}(\text{NO}_3)_2$
8. Magnesium Chloride, MgCl_2
9. Magnesium Chloride, MnCl_2
10. Zinc-sulphate, ZnSO_4 **[DELETED]**

I. Qualitative analysis.

Q: Identify of anion and cation in the given salt by systematic procedure and report name of salt.

10 Marks

VOCATIONAL BRIDGE COURSE

CHEMISTRY

PRACTICALS

Question Bank for Titrimetric Analysis (Volumetric Analysis)

SECTION - A

01. Estimate the amount of Hydrochloric acid present in 1000 ml of the given solution. 0.05 M Sodium Carbonate solution is supplied.
02. Estimate the amount of Sodium Carbonate present in 500 ml of the given solution. 0.1M Hydrochloric acid solution is supplied.

SECTION – B

03. Estimate the amount of Oxalic acid present in 250 ml of the given solution. 0.2M Sodium Hydroxide acid solution is specified.
04. Estimate the amount of Sodium Hydroxide present in 100 ml of the given solution. 0.1M Oxalic acid solution is supplied.

SECTION - C

05. Estimate the amount of Oxalic acid present in 1000 ml of the given solution. 0.02M Potassium permanganate solution is supplied. **[DELETED]**
06. Estimate the amount of Potassium Permanganate present in 500 ml of the given solution. 0,05M Oxalic acid solution is supplied.

SECTION-D

07. Estimate the amount of Ferrous Ammonium Sulphate present in 250 ml of the given solution. 0.02 M Potassium Permanganate solution is supplied.
08. Estimate the amount of Potassium Permanganate present in 100 ml of the given solution. 0.1 M Ferrous Ammonium Sulphate solution is supplied.

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VOCATIONAL BRIDGE COURSE

BOTANY

PRACTICALS

WEIGHTAGE OF MARKS

S.No.	Chapter	Number of Periods	Weightage of Marks
1.	Anatomy	04	05
2.	Taxonomy	02	04
3.	Experiments (Physiology, Ecology) [DELETED]	06	05
4.	Spotter/Slides	06	06
5.	Record and Herbarium	02	5+5=10
Total		20	25

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VOCATIONAL BRIDGE COURSE

BOTANY

PRACTICALS

MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks: 25

1. Take the T.S. of the given material 'A' and prepare a slide. Identify the material with suitable reasons. Draw a neat labeled diagram.

5 Marks
2. Describe the identifying features of plant material 'B' and identify it upto family level, by giving reasons. Draw L.S. of flower, Floral diagram and write floral formula.

4 Marks
3. Conduct the given experiment 'C'. Comment on the results and their significance. **[DELETED]**

5 Marks
4. Identify the Spotters/Slides D, E and F (2 × 3)

6 Marks
5. Record (5 marks) and Herbarium (5 marks)

10 Marks

VOCATIONAL BRIDGE COURSE

BOTANY

PRACTICALS

QUESTION BANK

Section - A

I. Anatomy: Section Cutting of the following plant material and preparation of slide.

1. Monocot Root eg. Crinum **[DELETED]**
2. Dicot Root (Primary) eg. Cicer/Trigonella Seedling **[DELETED]**
3. Mono Stem eg. Grass
4. Dicot Stem (Primary) eg. Tridax

Section - B

II. Taxonomy:

5. Description of the family. Vegetative and Floral Characters that are necessary for Identification of the Family
(a) Fabaceae **[DELETED]** (b) Solanaceae (c) Liliaceae.

Section - C [DELETED]

III. Physiology Experiments:

6. Determination of transpiration by Cobalt Chloride method. **[DELETED]**
7. Study of Plasmolysis (by Rheo discolor peels or by grapes) **[DELETED]**
8. Determination of Osmotic Potential (by Potato Osmometer) **[DELETED]**

Section - D

IV. Spotters/Slides Identification: (One Spotter from each section)

9. Tuberos Root - eg. Carrot **[DELETED]**
10. Epiphytic roots - eg. Vanda. **[DELETED]**
11. Phylloclade - eg. Opuntia **[DELETED]**
12. Rhizome - eg. Zinger **[DELETED]**
13. Corm - eg. Colocasia **[DELETED]**
14. Bulb - eg. Onion **[DELETED]**

15. Insectivorous leaf - eg. Nepenthes **[DELETED]**
16. Hypanthodium – eg. Ficus
17. Spadix – eg. Colocasia **[DELETED]**
18. Drupe - eg. Mango **[DELETED]**
19. Hesperidium - citrus **[DELETED]**

Section - F

20. Funaria plant with saprophyte
21. Selaginella – Plant
22. Cycas – microsporophyll
23. Cycas megasporophyll
24. Pisum plant (pea)
25. Zea (corn) plant **[DELETED]**

Section - E

26. Nostoc – Vegetative filament
27. Spirogyra Vegetative filament
28. Rhizopus – mycelium
29. Agaricus Basidiocarp

V. Record and Herbarium

Herbarium: 10 Sheets should be prepared by the student out of which two will be Economic importance; two will be of Ecological importance and the remaining six will be of the families included in the syllabus.

VOCATIONAL BRIDGE COURSE

ZOOLOGY

PRACTICALS

I. Identification of displayed chart 1 + 2 + 2 = 5 Marks

- (a) Human being - Digestive System **[DELETED]**
- (b) Human being - Male Reproductive System
- (c) Human being - Female Reproductive System
- (d) Human - Eye **[DELETED]**
- (e) Human - Ear **[DELETED]**

II. Physiology 1+ 3 + 1 = 5 Marks

- (a) Identification of Sugar
- (b) Albumin and
- (c) Starch in given sample **[DELETED]**

III. Spotling: Specimens + slides – Marks 1 + 1 = 2 (½ + 1 + ½ = 2)

- 1. Spong 2 × 5 = 10 Marks
- 2. Jelly fish
- 3. Tape worm
- 4. Ascais - Male & Female
- 5. Earth worm
- 6. Leech
- 7. Scorpion
- 8. Palaemon
- 9. Crab
- 10. Spider
- 11. Butterfly
- 12. Pila
- 13. Star fish

14. (a) T.S. of Liver
(b) T.S. of starch
(c) T.S. of Intestine
(d) T.S. of Pancreas **[DELETED]**
(e) T.S. ovary
(f) Simple Squamous epithelium
(g) Columnar epithelium
(h) re) T.s of blood smear
(i) T.S. of bone

15. Osteology:- Joints :- Pivot Joint, Ball & socket joint, Hinge joint, gliding joint.
[DELETED]

16. Record

5 Marks

ZOOLOGY

PRACTICAL MODEL QUESTION PAPER

Time: 2 Hours

Max. Marks: 25

I. Identification of displayed Chart /Model.

Draw a neat labelled diagram of the same? (5) 1 + 2 + 2 = 5 Marks

- | | |
|---------------------------------------|---------|
| (1) Identification of Chart/Model (1) | 1 Mark |
| (2) Drawing the Chart/Model (2) | 2 Marks |
| (3) Labeling minimum (4) | 2 Marks |

II. Identify the presence of sugar in the given A, B, C, D samples. Write the principle procedure and the inference. (5) 1+3+1 = 5 Marks

- | | |
|---------------|---------|
| (1) Principle | 1 Mark |
| (2) Procedure | 3 Marks |
| (3) Result | 1 Mark |

Total 5 Marks

III. Identify the given a, b, c, d, e spottes. Draw, lable and write the characters.

2 × 5 = 10 Marks

- | | |
|---------------------|--------|
| (1) Identification | ½ Mark |
| (2) Diagram + Lable | ½ Mark |
| (3) Characters (5) | 1 Mark |

Total 2 Marks

IV. Record Book.

5 Marks