

• 320308 •

**M.Sc. (III<sup>rd</sup> Semester)**  
**Examination, December 2022**

**Botany**

**PAPER - II**

**BIOCHEMISTRY IN PLANTS**

*Time Allowed : 3 hours*

*Maximum Marks : 40*

*Minimum Marks : 14*

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*Note : Attempt all the questions. Options are internal.*

**Section-A**

**(Objective Type Questions)**

**5×1=5**

**1. Choose the correct answer :**

(i) Which of sterol is not synthesized by plants –

- (a) Ergosterol
- (b) Sitosterol
- (c) Campesterol
- (d) Stigmasterol

(ii) Aminoglycoside antibiotic is –

- (a) Erythromycin
- (b) Streptomycin
- (c) Penicillin-G
- (d) Tetracycline

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- (iii) Ribozyme is –
- (a) Ribosome as an enzyme
  - (b) Ribose sugar as an enzyme
  - (c) RNA as an enzyme
  - (d) Riboflavin as an enzyme
- (iv) Which of the following is not an integral membrane protein –
- (a) Cadherins
  - (b) Integrin
  - (c) Selectin
  - (d) RAS proteins
- (v) Visual output of Chromatography is called –
- (a) Chromatograph
  - (b) Chromatogram
  - (c) Electrogram
  - (d) Autoradiograph

### Section-B

#### (Short Answer Type Questions)

**5×2=10**

2. Write a brief account on  $\alpha$ - and  $\beta$ - Glycosidic bonds.

**OR**

Write a brief account on MUFAs and PUFAs.

3. Write a brief account on Ramachandran plot?.

**OR**

Write a brief account on non-photosynthetic pigment.

4. Write a brief account on Enzymes Commission.

**OR**

Make a list of enzymes that contain metal ion as cofactors.

5. Write short account on different types of Porter System found in membranes with example.

**OR**

Write an account on gated ion channels.

6. Write an account on Ion Exchange Chromatography.

**OR**

Write an account on Polyacrylamide Gel Electrophoresis.

### **Section-C**

**(Long Answer Type Questions)**

**5×5=25**

7. Describe the Homo-polysaccharides and Hetero-polysaccharides with suitable example.

**OR**

Write notes on :

- (a) Cholesterol
- (b) Steroids

8. Make a list of Amino acids found in Proteins.

**OR**

Write a detailed account on different types of Nucleotides found in nucleic acids.

9. How do Enzymes work? Explain it.

**OR**

What are the Enzyme Inhibitions? Explain the kinetics of these enzyme inhibitions.

10. Write detailed account on structural lipids found in membranes with suitable example.

**OR**

What is the active transport across membrane? Describe the  $\text{Na}^+/\text{K}^+$  pump with their metabolic significance.

11. Describe the High performance (high pressure) liquid Chromatography with their applications in Biochemistry.

**OR**

Describe the MALDI-TOF Mass Spectrometry with their applications in Biochemistry.

