

PG 3rd Semester Examination, 2019

BOTANY

PAPER – BOT-302 (Unit : I + II)

Full Marks : 40

Time : 2 hours

Answer all questions

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

Write the answers to Questions of each Units in separate books

UNIT – I

(Plant Physiology)

[Marks : 20]

1. Answer any *two* questions from the following : 2 × 2
(a) What are *aquaporins* ? Mention their function.

(Turn Over)

(b) What are channel proteins? Give example.

(c) What are SAGs and SDGs?

(d) Write the significance of CAM.

2. Answer any *two* from the following : 4×2

(a) Write a note on the role of phytochrome in flowering.

(b) Define HSPs. State their role on manipulation of stress in plants.

(c) Distinguish between symport and antiport.

(d) Schematically represent Z-scheme operated in light reaction of photosynthesis.

3. Answer any *one* from the following : 8×1

(a) Define gluconeogenesis. Briefly describe with a flowchart the reactions operated in this pathway. $2 + 6$

(b) Write short notes on the following : 4 + 4

- (i) Metabolic changes during seed germination
- (ii) Polar transport of auxin.

UNIT – II

(*Biochemistry*)

[*Marks : 20*]

4. Answer any *two* from the following : 2 × 2

- (a) Define isozymes citing one example.
- (b) Schematically represent the formation of peptide bond between two amino acids.
- (c) Distinguish between indole and non-indole alkaloids.
- (d) What is the difference between α -oxidation and β -oxidation of fatty acids ?

5. Answer any *two* from the following : 4 × 2

- (a) Diagrammatically represent the process of modulation in leguminous plants.

- (b) Give an account on competitive and non-competitive enzyme inhibition.
- (c) Define saturated and unsaturated fatty acids citing one example of each. Write the full form of PUFA and MUFA.
- (d) Define primary and secondary metabolites.

6. Answer any *one* from the following : 8 × 1

(a) Describe in detail the biosynthesis and breakdown of starch in plants. 5 + 3

(b) (i) Enumerate the different structural classes of proteins.

(ii) Write a short note on plant phenolics. 5 + 3
