

U.G. 6th Semester Examination - 2026**BOTANY****[MAJOR-VIII]****Course Code : BOT-MJ-CC-T-08****(Plant Physiology and Biochemistry)****[NEP-2020]**

Full Marks : 40

Time : 2½ Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any five questions of the following:

2×5=10

- i) What is capillary water?
- ii) What are the criteria of essentiality of an element?
- iii) What is meant by triple response of ethylene?
- iv) Define Heat Shock Protein (HSP) with its function.
- v) What is P-protein?
- vi) Write down the reaction catalysed by invertase.
- vii) What is amphoteric property of amino acids?
- viii) Define isoelectric point.

[Turn Over]

2. Answer any **two** questions of the following:

$$5 \times 2 = 10$$

i) Write briefly the Cohesion Tension theory of ascent of sap. 5

ii) Write down the factors causing seed dormancy. What are the significances of seed dormancy?

$$2\frac{1}{2} + 2\frac{1}{2} = 5$$

iii) Discuss briefly the ABC model of flowering.

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iv) What is incipient plasmolysis? Define Diffusion Pressure Deficit. Suppose there are two cells A and B. Cell A has a pressure potential of 4 bars and contains sap with an osmotic potential of '____' 12 bars. Cell B has pressure potential of 2 bars and contains sap with an osmotic potential of '____' 5 bars. In which direction water will move if they come in contact? Justify.

$$1 + 1 + 3 = 5$$

3. Answer any **two** questions of the following:

$$10 \times 2 = 20$$

i) Write down the effect of blue light, K^+ ion, CO_2 and ABA in stomatal movement. $2\frac{1}{2} \times 4 = 10$

ii) What is short distance transport? Write an example of transportable sugar. Describe with suitable sketches the long-distance transport of sugar in a plant.

$$1 + 1 + 8 = 10$$

iii) Write down the physiological roles of auxins in plants. Describe briefly the acid growth hypothesis of auxin action. Name one synthetic auxin. $5 + 4 + 1 = 10$

iv) What are the differences between Fats and Oils? Classify Lipids with example. $2 + 8 = 10$