FYUGP/Sem-4/BT-CE3

2026
(Regular)
Botany (Core)
Paper Code : BT-CE-4234
Paper Name : Plant Physiology

Time : 2 hours ***Full Marks : 45***

The figures in the margin indicate full marks for the questions.

1. Answer the following questions as directed : 1×4=4
   a) What is aeroponics ?
   b) Give two examples of chelating agents ?
   c) Identify if the following statement is right or wrong.
   "Root pressure is the result of active absorption by plant".
   d) Name one plant growth regulator which is in gaseous form.
2. Answer the following questions : 2×3=6
   a) Write briefly on ion antagonism with suitable examples.
   b) Define symport and antiport.
   c) What is vernalization ? Give an example of vernalization ?
3. Answer ***any three*** of the following questions : 5×3=15
   a) Write briefly on water movement through apoplast and symplast with suitable diagrams ?
   b) What is seed dormancy ? Write briefly on the causes and methods to induce and overcome seed dormancy ?
   c) What is photomorphogenesis ? What roles phytochrome and cytochrome play in photomorphogenesis.

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d) Give an account of physical factors influencing in the process of transpiration in plant.

e) Write a short note on antitranspirents.

f) Write in brief about the mechanism of phloem loading and unloading.

4. Answer ***any two*** of the following questions : 10×2=20

a) Write briefly on Pressure-Flow Model and source-sink relationship with suitable diagrams ? 4+4+2=10

b) Write briefly on essential and beneficial elements ? Describe briefly the macro and micro elements with their criteria for essentiality and the mineral deficiency symptoms ? 2+4+4=10

c) What are plant growth regulators ? Describe the biological role of auxin, cytokinin and gibberellin respectively. 1+3+3+3=10

d) What is water potential ? What are different components of water potential ? How these different components interact to maintain water potential of cell ? Describe how water potential changes in turgid and flaccid condition of a cell. 1+2+3+4=10

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