CBCS SCHEME

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BBT306D

Third Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Plant Physiology and Phytohormones

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Discuss the differences between active transport and passive transport for the uptake of water and minerals in plants.	10	L2	CO1
	b.	Discuss the differences between transpiration and evaporation. Explain the different kinds of transpiration in plants.	10	L2	CO1
		OR			
Q.2	a.	Define ascent of sap. Explain the various physical force theories in detail.	10	L1	CO1
	b.	The lack of mineral elements results in the inability of the plant to complete its life cycle. List the role and importance of any three essential and any two non-essential mineral elements and their deficiency symptoms.	10	L1	CO1
		Module – 2			
Q.3	a.	Photosynthetic apparatus consists of two components namely Chloroplasts and photosynthetic pigments. Summarize in detail the various photosynthetic pigments and their function. Draw a neat labelled diagram of chloroplast.	10	L2	CO1
	b.	EMP pathway paved the way for the synthesis of two molecules of ATP, $NADPH_2$ and pyruvate – Illustrate the ten enzyme-catalyzed reactions of the pathway.	10	L3	CO2
		OR			
Q.4	a.	Outline the cycle that deals with the synthesis of carbohydrates and the regeneration of ribulose biphosphate.	10	L1	CO2
	b.	Illustrate the right enzyme-catalyzed reactions of Krebs cycle in detail.	10	L3	CO2
		Module – 3			
Q.5	a.	Define phytohormones. Identify the structure, physiological effects and practical applications of auxin as a plant growth regulator.	10	L1	CO2
	b.	Sketch in detail the role, physiological effects and practical applications of gibberellins.	10	L3	CO2
		OR			
Q.6	a.	Identify in detail the structure, physiological effects and applications of cytokinin.	10	L3	CO2
	b.	Sketch in detail the role, physiological effects and applications of ethylene both as a plant growth promoter and inhibitor.	10	L3	CO2
		Module – 4			
Q.7	a.	Define seed dormancy. Analyze in detail the causes, forms and various method of breaking seed dormancy in plants.	10	L4	CO3
	b.	Examine the differences between photo-morphogenesis and photoperiodism.	10	L3	CO3
		OR			

Q.8	**a.**	Explain the process of sexual reproduction in plants with the help of a labelled diagram.	**10**	**L1**	**CO3**
	b.	Describe in detail the various types of Nastic and tropic movements in plants in response to various environmental ques.	**10**	**L2**	**CO3**
		Module – 5			
Q.9	**a.**	Explain in detail the mechanism of plant response to abiotic stress such as temperature.	**10**	**L2**	**CO3**
	b.	Explain in detail the mechanism of plant response to biotic stress such as pathogens.	**10**	**L1**	**CO3**
		OR			
Q.10	**a.**	Explain in detail the mechanism of plant response to abiotic stress such as drought.	**10**	**L1**	**CO3**
	b.	Explain in detail the mechanism of plant response to biotic stress such as herbivores.	**10**	**L1**	**CO3**

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