Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD (now MoE)
Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC
Coimbatore - 641 043, Tamil Nadu, India

Master's Degree Examination – May 2025
II Semester

Class : I P.G. **Time: 3 Hours**
Major : Botany **Max. Marks: 100**

23MBOC11 Plant Physiology

Course Outcomes:

CO1: Fundamental understanding of the metabolic events such as Transpiration and Translocation.
CO2: Enable the students to grasp the mechanism of Photosynthesis and Respiration.
CO3: Gains knowledge on practical applications of plant growth regulators and physiology of flowering in plants.
CO4: Acquires knowledge on the seed physiology and its technical aspects.
CO5: Analyse the various responses of plant against stress in relation to the environment.

Part A **10 x 1 = 10**
Choose the Correct Answer

1. Which of the following is not a function of stomata? CO1K1
   a. Regulation of turgidity of guard cell b. Loss of water vapour
   c. Loss due to guttation d. Exchange of O_2 and CO_2

2. Which of the following is an anti-transpirant? CO1K1
   a. Phenyl mercuric acetate b. Napthelene acetic acid
   c. Ethidium bromide d. None of the above

3. Cyclic photophosporylation is confined to CO2K1
   a. Photosystem I b. Photosystem II c. Both I & II d. None of the above

4. The cofactor required for the activity of pyruvate dehydrogenase is CO2K1
   a. zinc b. magnesium c. manganese d. copper

5. A widely used rooting hormone is CO3K1
   a. 2,4 -D b. NAA c. 2, 4, 5-T d. Cytokinin

6. The change over from vegetative to reproductive phase in plants takes place in response to CO3K2
   a. length of the day b. severity of temperature
   c. oxygen content in the air d. food material available in the soil

7. Gibberellins can facilitate seed germination due to their influence on CO4K2
   a. synthesis of abscisic acid b. rate of cell division
   c. production of hydrolyzing enzymes d. absorption of water through the hard seed coat

8. Which one of the following is not an inhibitory substance in inducing seed dormancy? CO4K1
   a. abscisic acid b. Phenolic acid c. Para-ascorbic acid d. Gibberlic acid

9. Which is produced during water stress that brings stomatal closure? CO5K1
   a. ethylene b. abscisic acid c. ferulic acid d. coumarin

10. Virulence of pathogen is determined by CO5K3
   a. gene of host b. gene of pathogen c. environment d. All the above

Part B **5 x 6 = 30**

Answer ALL questions

Each answer should not exceed 400 words or two pages

11. a. Enumerate the kinds of transpiration. CO1K1

(or)

11.b. Discuss translocation through Munch's hypothesis. CO1K2

12.a. Explain the structure of chloroplast. CO2K2

(or)

12.b. Summarize photorespiration. CO2K5

13. a. Comment on auxins and its effects in plants. CO3K4

(or)

13. b. Explain vernalization. CO3K2

14. a. List down the methods of breaking dormancy. CO4K4

(or)

14.b. Brief on special seed treatment methods. CO4K2

15.a. Elaborate biotic stress in plants. CO5K4

(or)

15.b. Discuss resistance mechanism in plants to environmental stress. CO5K2

Part C **5 x 12 = 60**

Answer ALL questions

Each answer should not exceed 800 words or four pages

16 .a. Illustrate the mechanism involved in stomatal moment. CO1K3

(or)

16. b. Hypothesise the mechanism of translocation through plants. CO1K5

17.a. Compare C3 and C4 pathways in photosynthesis. CO2K5

(or)

17.b. Summarise Kreb's cycle. CO2K5

18 .a. Survey the types of growth hormones through their structure and properties. CO3K5

(or)

18.b. Write an essay on physiology of flowering. CO3K4

19.a. Elaborate the process of seed germination. CO4K5

(or)

19.b. Discuss seed dormancy. CO4K4

20.a. Enumerate the various concepts of stress tolerance in biotic stress. CO5K5

(or)

20.b. Compile the types of abiotic stress and discuss about tolerance to the stress by Plants. CO5K6

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