

Roll No.

Total Pages : 3

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Jan. 2022

M.Sc. (Botany) - IIIrd SEMESTER

Developmental Biology (MBOT-301)

Time : 90 Minutes]


[Max. Marks : 25

Instructions :

1. *It is compulsory to answer all the questions (1 mark each) of Part-A in short.*
2. *Answer any three questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*


PART - A

1. (a) Name the genes involved in flower development? (1)
- (b) Meiosis in pteridophytes results in formation. (1)
- (c) The plant species that is extensively used as a model system in plant world is (1)
- (d) Differentiate between somatic and zygotic embryos. (1)

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- (e) What is parthenogenesis. Name its types? (1)
- (f) is a photoreceptive organelle of green alga involved in light harvesting. (1)
- (g) Development of multicellular sporophyte in archegoniate is a result of delayed mitosis. (True/False) (1)
- (h) What are bulliform cells? Mention their significance. (1)
- (i) The gives rise to epidermis and give rise to the vascular cylinder of the mature root. (1)
- (j) Define the following terms: heartwood and sapwood. (1)

PART - B

2. (a) Explain Flowering genes in Arabidopsis and Snapdragon? (3)
- (b) Differentiate between flowering genes and meristem identity genes. (2)
3. (a) Discuss different types of cambium in vascular plants and how do they differ from each other. (2)
- (b) List and discuss different modes of intracellular space formation in resin duct formation. (3)

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4. (a) Explain the telome concept of leaf evolution. (2)
- (b) Stellar evolution has been linked with leaf gap and leaf trace development in pteridophytes. Discuss. (3)
5. (a) Discuss self-compatibility mechanisms. (3)
- (b) Write short note on double fertilization; apomixis; male sterility mechanisms and application. (2)
6. (a) How many types of embryo sac are present in plants? Explain all. (2)
- (b) Differentiate between siphonocladous- and siphonous-type of thallus organization in algae. (3)