

## 1. REPRODUCTION IN LOWER AND HIGHER PLANTS

### MULTIPLE CHOICE QUESTIONS (1 MARK EACH)

- 1 The outer layer of pollen grain is thick and made up of complex ,non-biodegradable substance called as.....  
A. lignin  
B. cellulose  
C. pectin  
**D. Sporopollenin**
- 2 Sporoderm is made up of .....  
A. exosporium and endosporium  
B. outer integuments and inner integument  
C. testa and tegmen  
**D. exine and intine**
- 3 The number of meiotic and mitotic divisions necessary for development of female gametophyte in angiosperms is...  
A. 1 meiosis and 2 mitosis  
B. 1 mitosis and 3 meiosis  
C. 1 meiosis and 1 mitosis  
**D. 1 meiosis and 3 mitosis.**
- 4 Identify the odd one with respect to pollinating agent.  
A. Baobab  
**B. Bottle brush**  
C. Kadamb  
D. Sausage
- 5 In vitro pollen germination and pollen tube elongation can be induced by—  
A. boric acid  
B. glucose  
C. lactose  
**D. sucrose**
- 6 Self-incompatibility is found in flowers of plants.....  
A. *Calotropis*  
B. maize  
**C. *Thea***  
D. *Gloriosa*
- 7 Porogamy refers to the entry of a pollen tube through.....  
A. integuments  
B. chalaza  
**C. micropyle**  
D. stigma
- 8 ..... is an example of helobial endosperm.  
A. *Adoxa*  
B. coconut  
**C. *Asphodelus***  
D. sunflower
- 9 The single shield shaped cotyledon in monocot seed is known as .....  
A. coleoptile  
**B. scutellum**  
C. aleurone layer  
D. perisperm
- 10 The example of dicot endospermic seed is ....  
**A. castor**      B. pea  
C. mango      D. bean

- 11 Grafting is not possible in monocots because of ---  
 A. scattered vascular bundles  
 B. open vascular bundles  
 C. radial vascular bundles  
**D. absence of cambium**
- 12 Conidia formation is commonly seen in  
 A. *Amoeba*  
 B. *Paramecium*  
 C. *Sponges*  
**D. *Penicillium***
- 13 Which of the following is not the method of asexual reproduction?  
 A. Budding  
 B. Fragmentation  
**C. Sowing**  
 D. Binary fission
- 14 The plant part used for raising stem in grafting is –  
**A. Scion**  
 B. Stock  
 C. Leafy shoot  
 D. Any plant part

#### VERY SHORT ANSWER QUESTIONS (1 MARK EACH)

- 1 What is reproduction?
2. What are clones?
- 3 Give example of organism which produces zoospore.
- 4 Why anther is called as tetrasporangiate structure?
- 5 At which stage pollen grains are shed from the anther in Angiosperms?
- 6 What is hilum with respect to ovule?
- 7 What is protandry?
- 8 Name any one plant in which double fertilization was discovered?
- 9 Why fertilization process in angiosperms is called as double fertilization?
- 10 Which is the most common type of endosperm in angiospermic families?
- 11 What is the role of suspensor during the development of embryo?
- 12 What is adventive polyembryony?
- 13 Name the hormone produced by an unfertilised ovary responsible for enlargement of ovary into fruit.

#### SHORT ANSWER TYPE (SA-I) QUESTIONS (2 MARK EACH)

- 1 Explain any two methods of asexual reproduction.
- 2 Explain grafting as a method of artificial method of vegetative reproduction.
- 3 Draw a well labelled diagram of T.S. anther.
- 4 Describe the structure of pollen grain.
- 5 Draw a well labelled diagram of male gametophyte of angiosperms.
- 6 Describe the structure of female gametophyte of angiosperms.
- 7 Mention various adaptations for wind pollination.
- 8 What are the different adaptations shown by bird pollinated flowers?
- 9 Explain heterostyly and herkogamy with suitable example.
- 10 Give the significance of double fertilization.
- 11 Mention significance of fruit and seed formation.
- 12 Give an account of polyembryony.

### **SHORT ANSWER TYPE (SA-II) QUESTIONS (3 MARKS EACH)**

- 1 Explain various methods of vegetative reproduction.
- 2 How cutting, grafting and tissue culture is useful to humans?
- 3 Describe internal structure of anther (diagram is not expected).
- 4 Explain the development of male gametophyte in angiosperms (diagram is not expected).
- 5 Explain water pollination in detail with its types.
- 6 Give an account of any two biotic agents for pollination along with their adaptations.
- 7 Explain any two contrivances or outbreeding devices for pollination.
- 8 Describe the process of fertilization in angiosperms with the help of diagram.
- 9 Write a note on different types of endosperms in angiosperms.
- 10 Describe the development of dicot embryo in flowering plants.
- 11 Draw a well labelled diagram of monocot seed you have studied.
- 12 Explain various categories of apomixis.

### **LONG ANSWER TYPE (LA) QUESTIONS (4 MARKS EACH)**

- 1 Explain various horticultural methods of vegetative reproduction with the help of labelled diagram.
- 2 Describe the structure of anatropus ovule with the help of labelled diagram.
- 3 Describe the development of female gametophyte of angiosperms with the help of diagram.
- 4 Give an account of various abiotic agencies used in pollination along with their adaptations for pollination.
- 5 Give an account of pollen pistil interaction in detail.
- 6 Describe the process of double fertilization in angiosperms and add a note on its significance.