

CLASS - XII
BIOLOGY-TEST

Time : 90 Mins.

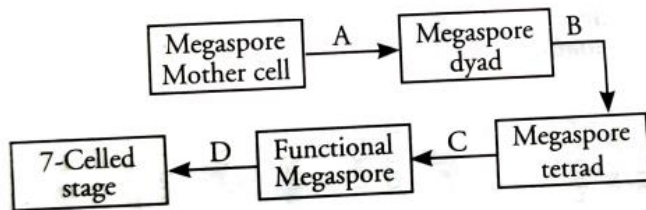
SEXUAL REPRODUCTION IN FLOWERING PLANTS

M.M : 40

SECTION - A
Multiple Choice Questions

[1] x 10 = 10

- The wall layer of microsporangium which nourishes the pollen grain is
(a) epidermis (b) endothecium (c) middle layers (d) tapetum
- The structure of bilobed anther consists of
(a) 2 thecae, 2 sporangia (b) 4 thecae, 4 sporangia
(c) 4 thecae, 2 sporangia (d) 2 thecae, 4 sporangia
- The number of pollen grains, produced by each head inflorescence of Family Asteraceae which has 10 actinomorphic flowers, if each anther produces 20 pollen grains, are
(a) 300 (b) 800 (c) 500 (d) 1000
- Pollen grains are well preserved as fossils because of presence of
(a) sporopollenin (b) cellulose (c) lignocellulose (d) pectocellulose
- Starting from the innermost part, the correct sequence of parts in an ovule are
(a) egg, nucellus, embryo sac, integument
(b) egg, embryo sac, nucellus, integument
(c) embryo sac, nucellus, integument, egg
(d) egg, integument, embryo sac, nucellus
- Given below are the stages of embryo sac formation from megaspore mother cell. Identify the cell divisions marked as A, B, C and D.



- A – Meiosis I, B – No division, C – Mitosis, D – Meiosis II
 - A – Meiosis I, B – Meiosis II, C – No division, D – Mitosis
 - A – Mitosis, B – No division, C – Meiosis II, D – Meiosis I
 - A – No division, B – Mitosis, C – Meiosis I, D – Meiosis II
- In a fertilised embryo sac, the haploid and diploid structures are
(a) synergid, nucellus (b) synergid, antipodal
(c) antipodal, synergid (d) nucellus, zygote
 - Cleistogamous flowers are self-pollinated because
(a) they are bisexual flowers which do not open at all



- (b) they are bisexual and open flowers
- (c) they are unisexual
- (d) their stigma mature before anthers dehiscence.

9. Which of the given statements are correct with respect to pollination in *Vallisneria*?

- (i) Pollen grains are light and non-sticky.
- (ii) Female flowers reach the surface of water by long stalks.
- (iii) Pollen grains are carried passively by water currents.
- (iv) Female flowers remain submerged in water.

Choose the correct option.

- (a) (i) and (iv) (b) (ii) and (iv) (c) (i) and (ii) (d) (ii) and (iii)

10. A papaya plant bears flowers but never produces fruits and seeds. The most probable cause for this situation is

- (a) plant is dioecious and bears only pistillate flowers
- (b) plant is dioecious and bears both pistillate and staminate flowers
- (c) plant is monoecious
- (d) plant is dioecious and bears only staminate flowers.

SECTION – B

11. What is the site of microsporogenesis? [2]
12. State one advantage and one disadvantage of cleistogamy. [2]
13. Gynoecium of a flower may be apocarpous or syncarpous. Explain with the help of an example each. [2]
14. Where exactly is the filiform apparatus present in the embryo sac of an angiosperm? State its function. [2]

SECTION -C

15. Differentiate between geitonogamy and xenogamy in plants. Which one between the two will lead to inbreeding depression and why? [3]
16. Why are angiosperm anthers called dithecous? Discuss the structure of its microsporangium. [3]
17. Where are the following structures present in a male gametophyte of an angiosperm? Mention the function of
(a) Germ pore (b) Sporopollenin (c) Generative cell. [3]

SECTION – D

18. Describe in sequence the events that lead to the development of a 3-celled pollen grain from microspore mother cell in angiosperms. [5]



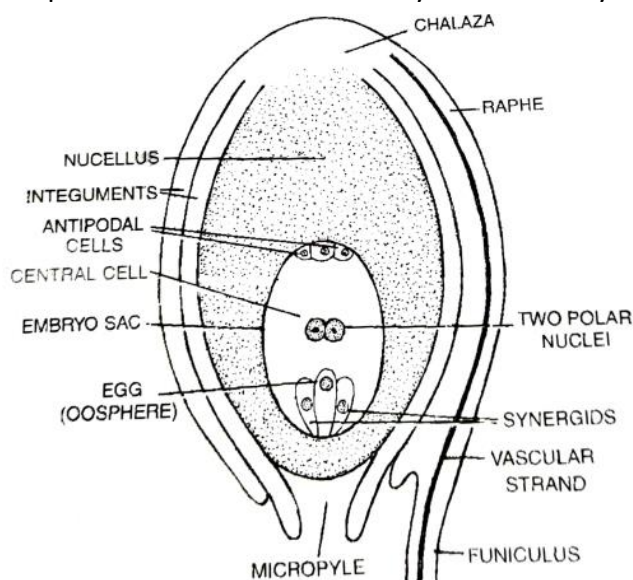
SECTION -E

Case Based Questions

[4] x 2 = 8

19. Study the figure and answer the following questions:

- What is embryo sac? How many cells and nuclei are present in the embryo sac?
- What is raphe?
- From which side the pollen tube enters the embryo sac and why?



20. The figure depicts a plant of *Commelina bengalensis*. It is seen to have two types of flowers.

- What is the significance of bearing cleistogamous flowers?
- What is the need of bearing chasmogamous flowers when the plant forms cleistogamous flowers?
- Discuss the significance of bearing two types of flowers.

