

CBSE Test Paper 02
Ch-2 Sexual Reproduction in Flowering Plants

1. Epiblast present in certain monocot embryo represents
 - a. Mesocotyl
 - b. Second cotyledon
 - c. Rudimentary leaves
 - d. Scutellum
2. Filiform apparatus present at micropylar part of the Synergids help in
 - a. Providing nutrition to embryo
 - b. Help in the germination of seed
 - c. Help in absorption of water
 - d. Guiding the entry of pollen tube
3. The endosperm cells in angiosperms are
 - a. Haploid
 - b. Tetraploid
 - c. Triploid
 - d. Diploid
4. Parthenocarpy can be induced by the application of
 - a. Duration of light
 - b. Temperature variation
 - c. Recombinant DNA
 - d. Growth hormones
5. The fusion of male gamete with an egg in the embryo sac is called
 - a. Double fertilization
 - b. Syngamy
 - c. Autogamy
 - d. Triple fusion
6. Which are the three cells found in a pollen grain when it is shed at the three-celled stage?
7. Why is banana considered a good example of parthenocarpy?

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8. Write the function of the Scutellum.
 9. In a case of polyembryony, if an embryo develops from the synergid and another from the nucellus which is haploid and which is diploid?
 10. What is self incompatibility? Why does self pollination not lead to seed formation in self incompatible species?
 11. Why are pollen grains produced in enormous quantities in maize?
 12. Define seed dormancy. Give the causes and significance of seed dormancy.
 13. Draw a neat labelled sketch of L.S. of an endospermous monocot seed.
 14. Differentiate between microsporogenesis and megasporogenesis. Which type of cell division occurs during these events? Name the structures formed at the end of these two events.
 15. Draw a diagram of male gametophyte of an angiosperm. Label any four parts. Why is sporopollenin considered the most resistant organic material?

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Answer

1. b. Second cotyledon, **Explanation:** Embryo of certain monocotyledonous seeds contain additional cotyledon besides one present in all monocots. This cotyledon represents the evolutionary stage of cotyledon formation from one to two.
2. d. Guiding the entry of pollen tube, **Explanation:** Filiform apparatus is finger-like projection attached with egg apparatus. This apparatus guide the pollen tube carrying male gametes for facilitating Syngamy.
3. c. Triploid, **Explanation:** Endosperm is the product of triple fission in which two polar nuclei fuse with one of the male gamete. Endosperm provide nutrient to the developing embryo
4. d. Growth hormones, **Explanation:** Development of seedless of fruits without fertilisation is called Parthenocarpy. Parthenocarpy can be induced artificially by application of growth regulators.
5. b. Syngamy, **Explanation:** Each pollens grain produces two male gametes. One male gamete fuse with egg to form zygote. This fusion is called Syngamy. The other male gamete fuses with two polar nuclei to form endosperm. This fusion is called triple fusion.
6. One larger cell is vegetative cell and two small cells are male gametes.
7. Parthenocarpic fruits develop without fertilization, hence they are seedless as banana.
8. The single cotyledon of monocot seed is known as scutellum. It absorbs the digested nutrition/ food from the endosperm and provides nourishment to the embryo for its growth and development.
9. Synergid embryo is haploid and the nucellar embryo is diploid.
10. The inability of certain gametes even from genetically similar plant species, to fuse with each other is called self incompatibility. It is because of interaction between the chemicals of the pollen and those of stigma. [Pollen-Pistil interaction).
11. Because in maize pollination takes place through the wind. Since it involves a lot of wastage, so pollen grains are produced in enormous number
12. The inability of seeds to germinate even if external conditions are favourable is called

seed dormancy. Seed dormancy may be due to one or more of the following reasons:

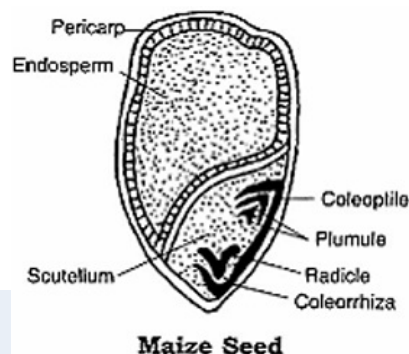
(i) Hard and impermeable seed coats.

(ii) Presence of certain inhibitory substances such as abscisic acid (ABA), coumarin etc. Significance:

(i) It helps the seeds to tide over the unfavourable period.

(ii) It enables the seeds to be disseminated safely and help them to germinate, when the environment conditions are favourable

13.



14.

Microsporogenesis	Megasporogenesis
It is process of formation of microspores from microspore mother cell.	It is the process of formation of megaspores from megaspore mother cell.
It occurs inside the pollen sacs of anthers.	It occurs in nucellus part of ovule.

- In both the events meiosis cell division occurs.

- Microsporogenesis results in the formation of microspores while megasporogenesis forms megaspores.

15. Sporopollenin can stand with high temperatures and strong acids and alkali. It is also not affected by enzymes.

