



BIOLOGY

**BOOKS - VIKRAM PUBLICATION (
ANDHRA PUBLICATION)**

**SEXUAL REPRODUCTION IN
FLOWERING PLANTS**

Very Short Answer Type Questions

1. Where is the egg apparatus is placed in the embryo sac ?



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2. Name the part of gynoecium that determines the compatible nature of pollen grain.



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3. Name the common functions that cotyledons and nucellus perform.



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4. Name the parts of pistil which develop into fruit and seeds.



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5. In case of polyembryony if an embryo develops from the synergid and another from the nucellus which is haploid and which is diploid ?



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6. Can an unfertilised, apomictic embryosac give rise to a diploid embryo ? If yes, then how ?



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7. Which are the three cells found in a pollen grain when it is shed at the three celled stage ?



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8. What is self-incompatibility ?



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9. Name the type of pollination in self incompatible plants.



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10. Draw the diagram of a mature embryo sac and show its 8-nucleate, 7 - celled nature. Show the following parts : antipodals, synergids, egg, central cell, polar nuclei.



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11. Which is the triploid tissue in a fertilized ovule ? How is the triploid condition achieved ?



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12. Are pollination and fertilisation necessary in apomixis ? Give reasons.



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13. How is pollination carried out in water plants ?



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14. What is the function of the two male gametes produced by each pollen grain in angiosperms.



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15. Name the parts of an angiosperm flower in which development of male and female gametophyte take place.



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16. What is meant by monosporic development of female gametophyte?



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17. Mention two strategies evolved to prevent self-pollination in flowers.



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18. Why do you think the zygote is dormant for sometime in a fertilised ovule?



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19. If one can induce parthenocarpy through the application of growth substances, which fruits would you select to induce parthenocarpy and why?



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20. What is meant by scutellum ? In which type of seeds is it present ?



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21. Define with examples endospermic and non-endospermic seeds.



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Short Answer Type Questions

1. Mention two strategies evolved to prevent self-pollination in flowers.



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2. Given below are the events that are observed in an artificial hybridization programme. Arrange them in the correct sequential order in which they are followed in the hybridization programme.

- a) Re-bagging
- b) Selection of parent.
- c) Bagging
- d) Dusting the pollen on stigma
- e) Emasculation
- f) Collection of pollen from male.



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3. Discuss the various types of pollen tube entry into ovary with the help of diagrams.



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4. 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.



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5. What is bagging technique? How is it useful in a plant breeding programme?



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6. What is triple fusion? Where and how does it take place? Name the nuclei involved in triple fusion.



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7. Differentiate between

a) Hypocotyl and Epicotyl

b) Coleoptile and Coleorhiza

c) Integument and testa

d) Perisperm and Pericarp



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8. What is meant by emasculation? When and why does a plant breeder employ this technique?



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9. Apomixis is



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10. Write briefly about the different types of ovules.



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Long Answer Type Questions

1. Starting with the zygote. draw the diagrams of the different stages of embryo development in a dicot.



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2. What are the possible types of pollinations in chasmogamous flowers ? Give reasons.



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3. With a neat, labelled diagram, describe the parts of a mature angiosperm embryo sac. Mention the role of synergids.



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4. Draw the diagram of a microsporangium and label its wall layers. Write briefly about the wall layers.



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5. Explain the process of fertilization in plants.



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6. Write a brief account on agents of pollination.



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Exercises

1. Vivipary automatically limits the number of offsprings in a litter How ?



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2. Does self incompatibility impose any restrictions on autogamy ? Give reasons and suggest the method of pollination in such plants.



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3. What is polyembryony and how can it be commercially exploited ?



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4. Are parthenocarpy and apomixis different phenomena ? Discuss their benefits.



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5. Why does the zygote begin to divide only after the division of Primary endosperm cell (PEC)?



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6. The generative cell of two - celled pollen divides in the pollen tube but not in a three celled pollen. Give reasons.



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Important Questions

1. Name the component cells of the "egg apparatus" in an embryo sac.



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2. In case of polyembryony if an embryo develops from the synergid and another from the nucellus which is haploid and which is diploid ?



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3. What is self-incompatibility ?



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8. Mention two strategies evolved to prevent self-pollination in flowers.



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9. List three strategies that a bisexual chasmogamous flower can evolve to prevent self pollination (autogamy).



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