



BIOLOGY

BOOKS - PRADEEP BIOLOGY (HINGLISH)

SEXUAL REPRODUCTION IN FLOWERING PLANTS

Curiosity Question

1. How a pollen grain recognises the stigma of its own species



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2. Why fusion of male nucleus with the secondary nucleus of embryo sac is called fertilization ?



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3. Why are endosperm of angiospermic seed is called triploid ?

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4. What triggers the development of seeds in plants ?

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5. Can a fruit develops without fertilization and without the formation of seeds ?

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1. Where are the archegonia in angiosperms ?



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2. It is possible for plants to produce seeds without fruits.



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Ncert Exercise With Answers

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



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2. Differentiate between microsporogenesis and megasporogenesis. Which type of cell division occur during these events ? Name the structure formed at the end of these two events

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3. Arrange the following terms in the correct development sequence : Pollen grain, sporogenous tissue, microspore tetrad, pollen mother cell, male gametes.

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4. With a neat, labelled diagram, describe the parts of a typical angiosperm ovule.

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

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6. With a neat diagram explain the 7-celled, 8-nucleate nature of the female gametophyte.

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7. What are chasmogamous flowers ? Can cross-pollination occur in cleistogamous flower ? Give reasons for your answer ?

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

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9. What is self-incompatibility? Why does self-pollination not lead to seed formation in self-incompatible species?

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

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11. What is triple fusion? Where and how does it take place?

Name the nuclei involved in triple fusion.



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12. Why do you think the zygote is dormant for sometime in a fertilized ovule?



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13. Differentiate between:

- (a) Hypocotyl and epicotyl,
- (b) Coleoptile and coleorhiza,
- (c) Integument and testa,
- (d) Perisperm and pericarp.



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14. Why is apple called a false fruit? Which part(s) of the flower forms the fruit?

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

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16. 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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17. Explain the role of tapetum in the formation of pollen-grain wall .

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18. What is apomixis and what is its importance ?

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Ncert Exercise With Answers Additional Questions Very Short Answer Questions

1. What are the characters of flowers pollinated by insects ?

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2. Name the two essential parts of flower .



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3. (i) Give the term for pollination by bat. (ii) Give one example of bat pollinated flowers.



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4. Name as cultivated plant in which neither fruits nor seeds are formed.



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5. If the diploid number of chromosomes in an angiospermic plant is 18, what number would you expect in the endosperm and embryo of that plant.

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6. What is funiculus ?

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7. What is nucellus ?

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8. What do you mean by hydrophily ?

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9. Name any one bird-pollinated flower and mention one most important characteristic of such flower .

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10. Why are cucurbits referred to as monoecious ?

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11. Why are date palm plants referred to as dioecious ?

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12. Why are pollen grains produced in enormous quantity in Maize ?



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13. Why are flowers of Cucumber referred to as epigynous ?



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14. Define anemophily .



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15. Define double fertilization .



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16. One of the plants bearing anemophilous flowers is (a) Vallisneria (b) Salvia (c) Kigelia (d) Maize

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17. The microscopic pollen grains of the past are obtained as fossils. Mention the characteristic of the pollen grains that makes it happen .

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18. Mention the pollinating agent of an inflorescence of small dull coloured flowers with well exposed stamens and large

feathery stigma. Give nay one characteristic of pollen grains produced by such flowers.

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19. Name the type of flower which favours cross pollination.

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20. A bilobed, dithecous anther has 100 microspore mother cells per microsporangium. How many male gametophytes this anther can produce ?

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21. An anther with malfunctioning tapetum often fails to produce viable male gametophytes . Give one reason



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22. Sexual reproduction of flowering plants was discovered by

A. Camerarius

B. Nawaschin

C. Strasburger

D. Maheshwari.

Answer:



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23. Fill in the blanks :

Flowers which do not open are called



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24. Fill in the blanks :

A mature typical embryo sac contains..... cell and ... nuclei.



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25. Name the nuclei involved in triple fusion.



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26. State one advantage and one disadvantage of cleistogamy.



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27. How many pollen grains and ovules are likely to be formed in the anther and the ovary of an angiosperm bearing 25 microspore mother cells and 25 megaspore mother cells respectively ?

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28. In case of polyembryony, an embryo A develops from the synergids and the embryo B develops from the nucellus. State the ploidy of embryo A and B.

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1. What do you understand by ornithophily and chiropterophily ?



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2. Write a note on the need and significance of pollination in plants.



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3. What do you understand by double fertilization ?



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4. Draw a well-labelled diagram of a mature ovule, showing its internal structure.

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5. Name one example for each of the following :

- (i) A plant in which both male and female sex organs occurs in the same flower .
- (ii) A plant in which separate male and female flowers are borne on the same individual at different positions.
- (iii) A cultivated plant in which neither fruits nor seeds are formed.
- (iv) A species in which the individual plant is either male or female.

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6. Draw a labelled sketch of the section of a mature pollen grain.

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7. Name the pollinating agents fo flowers like maize and wheat.

Give any two favourable features of such a flower.



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8. Define triple fusion. What is the product of this process? What does the product develop into ?



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9. Name the pollinating agent of flowers like Salvia, Nastrutium and Sun flower. Give two favourable features of such a flower for pollination.



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10. Differentiate between monoecious and dioecious plants. Give one example of each .



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11. Give characteristics of insect pollinated flowers.



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12. Write the significance of double fertilization .



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13. Rearrange the following in order of their position from outside to inside in a carpel.

(i) Nucellus (ii) Embryo sac (iii) Integuments (iv) Ovary .

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14. Write the function of flowers.

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15. Why is endosperm in angiosperm ovule considered as more efficient ?

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16. Why is the process of fertilization in a flowering plant referred to as double fertilization ? Explain .



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17. The flower of brinjal is referred to as chaamogamoul while that of bean is cleistogamous. How are they different from each other ?



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18. How does endosperm of angiosperm become triploid ?



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19. What is seed dormancy ? Give any two advantages of seed dormancy .



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20. Banana is a parthenocarpic fruit whereas oranges show polyembryony. How are they different from each other with respect to seeds ?



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21. Draw a vertical section of a maize grain and label (i) pericarp, (ii) scutellum, (iii) coleoptile, and (iv) radicle



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22. Name the cell from which the endosperm of coconut develops. Give the characteristic features of endosperm of coconut .

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23. Mention the reasons for difference in ploidy of zygote and primary endosperm nucleus in an angiosperm.

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24. How many haploid cells are present in mature female gametophyte of a flowering plant? Name them.

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25. If you squeeze a seed of orange you might observe many embryos of different sizes. How it possible ? Explain.



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26. Fill in the blanks :

A. Production of synthetic (artificial) seeds has also been possible through culture .



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27. Fill in the blanks :

B. of pollen grains is made up of sporopollenin.



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28. Fill in the blanks :

C. Functional ... is the first cell of female gametophyte



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29. Fill in the blanks :

D. Out of the eight nuclei of female gametophyte, get organised at the end as egg apparatus.



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30. Fill in the blanks :

E. The winged of pine are found hundreds of kilometers away from the parent plant.



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31. Name the common function that cotyledons and nucellus perform.

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32. Indicate the stages where meiosis and mitosis occur (1, 2 or 3) in the flow chart.

Megaspore mother cell $\xrightarrow{1}$ Megaspores $\xrightarrow{2}$ Embryo sac $\xrightarrow{3}$ Egg

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

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34. Name the type of pollination in self-incompatible plants.



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



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36. Which is the triploid tissue in a fertilised ovule? How is the triploid condition achieved?



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

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38. Geitonogamous flowering plants are genetically autogamous but functionally cross-pollinated. Justify.

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39. (a) How does cleistogamy ensure autogamy?

(b) State one advantage and one disadvantage of cleistogamy to the plant.

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40. Explain the steps that ensure cross pollination in an autogamous flower.



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41. In angiosperms , zygote is diploid while primary endosperm cell is triploid . Explain.

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42. Name all the haploid cells present in an unfertilized mature embryo-sac of a flowering plant. Write the total number of cells in it.

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43. Differentiate between the two cells enclosed in a mature male gametophyte of an angiosperm.

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44. a) Describe the endosperm development in coconut.

b) Why is tender coconut considered a healthy source of nutrition?

c) How are pea seeds different from castor seeds with respect to endosperm?



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45. Name the organic materials the exine and latine of an angiosperm pollen grains are made up of. Explain the role of exine.



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46. List the post-fertilization events in angiosperms.



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47. Gynoecium of a flower may be apocarpous or syncarpous.

Explain with the help of an example each.



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48. A pollen grain in angiosperm at the time of dehiscence from an anther could be 2-celled or 3-celled. Explain. How are the cells placed within the pollen grain when shed at a 2-celled stage?



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49. " Pollen grains in wheat are shed at 3-celled stage while in peas they are shed at 2-celled stage". Explain. Where are germ pores present in a pollen grain ?



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50. How many cells are present in the pollen grain at the time of their release from anther ? Name the cells.



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51. A mature, embryo-sac in a flowering plant may possess 7-cells, but 8-nuclei. Explain with the help of a diagram only.



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52. In a flowering plant is microscope mother cell produce four male gametophytes while a megaspore mother cell form only one female gametophyte. Explain.

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53. Metion the ploidy of the different types of cells present in the female gametophyte of an angiosperm.

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54. Comment upon the mode of pollination in Vallisneria and Eichhornia which have emergent flowers.

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55. Write short notes on the following :

(a) hydrophily (b) entomophily (c) anemophily (d) cross-pollination .

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56. Describe the structure of a pollen grain and the process of its germination .

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57. Describe the structure of a typical monosporic embryo sac found in flower in plants.

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58. What do you understand by the development of an embryo ?

Support the answer with suitable diagrams.



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59. Write a note on the development of endosperm . Mention the types with examples



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60. "Incompatibility is a natural barrier in the fusion of gametes".

Justify the statement.



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61. What do the following parts form in a fruit ? Ovary wall , outer integument , inner integument , zygote , primary endosperm nucleus, ovule.

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62. Write briefly the role of pollination in an angiosperm .

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63. Draw a labelled diagram of the longitudinal section of a pistil showing pollen germination .

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64. Draw a labelled diagram of the longitudinal section of a maize grain to show the structure of mature embryo.



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65. Describe the structure of female gametophyte of an angiosperm .



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66. Write the characters of insect pollinated flowers .



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67. Trace the development of microsporocyte in the anther to a mature pollen grain .



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68. Sketch , label and describe V.S. of a typical flower.



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69. What are the characteristics of wind pollinated flowers ?



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70. Trace the development of a mature ovule from a megaspore mother cell.



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71. Fertilization is essential for the production of seed, but in some angiosperms seeds develop without fertilization.

(a) Give an example of an angiosperm that produces seeds without fertilization. Name the process.

(b) Explain the two ways by which seeds develop without fertilization.



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72. Draw a longitudinal section of a post-pollinated pistil showing entry of Pollen tube into a mature embryo-sac. Label filiform apparatus, chalazal end, Hilum, antipodals, male gametes and secondary nucleus.



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73. (i) Write the characteristics features of anther, pollen and stigma of wind polinated flowers.

(ii) How do flowers reward their insect pollinators ? Explain.



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74. Explain the process of artificial hybridisation to get improved crop, variety in (i) plants bearing bisexual flowers (ii) female parent producing unisexual flowers.



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75. (a) Mention any four strategies adopted by flowering plants to prevent self- pollination.

(b) Why is geitonogamy also referred to as genetical autogamy?



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76. Match the item in column (A) with column (B) . Each point in column (A) has minimum one match in column (B) and maximum two matches.

Column (A)

1. Autogamy
2. Apomixis
3. Pollen sacs
4. Ovules
5. Embryosac
6. Pollar nuclei
7. Cross pollination

Column (B)

- (a) Megasporangia
- (b) Xenogamy
- (c) Female gametophyte
- (d) Asexual reproduction
- (e) Allogamy
- (f) Secondary nucleus
- (g) Microsporangia
- (h) Agamospermy
- (i) Self pollination



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77. Fill in the blanks:

A. is the development of seeds from unfertilised female

gamete.



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78. Fill in the blanks:

B. Parthenocarpy is the development of in an unfertilised flower, resulting in a fruit.



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79. Fill in the blanks:

C. Polyembryony is the presence of more than one in the



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80. Fill in the blanks:

D. There are usually three germ pores in and one in



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81. Fill in the blanks:

E. The anther wall is composed of to layers.



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82. Fill in the blanks:

F. The flowers producing and with bright attract the insects.



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83. Fill in the blanks:

G. Plants with reduced power of Reproduction
Dormant period of seed or viability were propagated
through vegetative reproduction.

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84. Fill in the blanks:

H. The integuments of ovule surround the all around except
at the apex, leaving a narrow passage , called the

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85. Fill in the blanks:

I. The wind-pollinated flowers are generally sexual.

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86. Fill in the blanks:

J. In many dicots, the reserves in the and consumed by the developing embryo.



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



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



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



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90. Differentiate between fertilization and double fertilization in three points.



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91. With a neat, labelled diagram, describe the parts of a typical angiosperm ovule.



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92. With the help of a diagram, explain the structure of mature male gametophyte .



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93. Describe the development of embryo sac in angiosperm with the help of diagram.



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94. Explain double fertilization process.



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95. Name various agencies of cross pollination and give the characteristics of entomophilous flowers.



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96. Explain any three advantages the seeds offer to angiosperms.



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97. Double fertilization is reported in plants of both castor and groundnut . However the mature seeds of groundnut are non-albuminous and castor are albuminous . Explain post fertilization events that are responsible for it.



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98. A non - biology person is quite shocked to know that apple is a false fruit mango is a true fruit and banana is a seedless fruit .As a biology student how would you satisfy this person ?

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99. Describe the development of endosperm after double fertilization in an angiosperm. Why does endosperm development precedes that of zygote ?

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100. State what is apomixis. Write its significance. How can it be commercially used ?

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101. Draw and label the enlarged view of microsporangium of an angiosperm . State the function of its innermost wall layer.



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102. Can a plant flowering in Mumbai be pollinated by pollen grains of the same species growing in New Delhi ? Provide explanations to your answer



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103. Explain the process of pollination in Vallisneria .How is it different in water- lily , which is also an aquatic plant ?



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104. (a) Trace the development of an endosperm after fertilization with reference to coconut. Mention the importance of endosperm development .

(b) Write the importance of 'pollen bank '



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105. a) List the three stages the annuals and biennial angiosperms have to pass through during their life cycle.

b) List and describe any two vegetative propagules in flowering plants.



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106. Differentiate between an annual and a biennial plant.

Provide one example of each.



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107. Parthenocarpy and apomixis have been observed in some plants. Give an example of each. State a similarity and a difference observed between the two processes.



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108. Differentiate between parthenocarpy and pathenogenesis. Give one example of each.



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109. If the meiocyte of a maize plant contains 20 chromosomes. Write the number of chromosome in the endosperm and

embryo of the maize grain and give reasons in support of your answer.

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110. Do you think apomixis can be compared with asexual reproduction? Support your answer, giving one reason. How is apomixis beneficial to farmers? Explain.

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111. The embryo sac in female gametophyte is seven cells and eight nucleated structure. Justify the statement with the help of a labelled diagram.

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112. List the changes that occur when an ovule matures into seed.

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Ncert Exercise With Answers Additional Questions Long Answer Questions

1. Pollination is an important phenomenon in the life cycle of a flowering plant. Describe the agencies responsible for this.

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2. Write an essay on the development of female gametophyte. Illustrate the answer with suitable diagram.

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3. In what ways does the study of pollination enrich our understanding of biology and enable us to apply it for increasing crop productivity ?

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4. How does developmet of a male gametophyte or pollen take place ?

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5. Describe the structure of angiospermic ovule as seen in V.S. and mention in what respects angiospermic ovule differs from gymnospermic ovule.

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6. What develops into a microspore mother cell in a flower ? Trace the development of this cell into a pollen grain which is ready for germination . Draw a labelled figure of a mature pollen grain .



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7. Trace the development of a megaspore mother cell of a flower into a mature ovule. Give a labelled diagram of the final stage.



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8. Describe the development of female gametophyte in angiosperm .



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9. Define double fertilization . Explain the process of double fertilization in an angiosperm plant. Write its importance .



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10. What is double fertilization ? Describe the process giving significance . Add a note on post fertilization changes leading to formation of seed. .



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11. Draw a diagram of the longitudinal section of a mature anatropous ovule and label any ten parts in it.



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12. Draw a labelled diagram of the sectional view of a mature pollen grain in angiosperms. Explain the functions of its different parts.



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13. (a) Draw a diagrammatic sketch of the sectional view of a typical anatropous ovule.

(b) List the components of the embryo sac and mention their fate on fertilisation.



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14. (a) Draw a schematic labelled diagram of a fertilised embryo sac of an Angiosperm.

(b) Describe the stage in embryo development in a dicot plant.

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15. (a) Draw a labelled diagram of a mature embryo sac .

(b) Why does a pollen grain possess two male gametes ? Explain.

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16. Explain with the help of a diagram the development of a mature embryo sac from a megaspore mother cell in angiosperm.

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17. How does the pollen mother cell develop into a mature pollen grain? Illustrate the stages with labelled diagrams.



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18. (a) Trace the development of embryo after syngamy in a dicot plant.

(b) Endosperm development precedes embryo development. Explain.

(c) Draw a diagram of a mature dicot embryo and label cotyledons , plumule, radicle and hypocotyl in it.



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19. Describe in sequence the events that lead to the development of a 3-celled pollen grain from microscope mother cell in angiosperms.

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20. (a) Trace the development of megaspore mother cell up to the formation of a mature embryo-sac in a flowering plant.

(b) Draw a labelled diagram of the structure of mature dicot embryo.

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21. (a) Draw a labelled longitudinal view of an albuminous 'seed'.

(b) How are seeds advantageous to flowering plants ?



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22. What are the possible types of pollinators in chasmogamous flowers. Give reasons.



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



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24. Give reasons why:

(i) Most zygotes in angiosperms divide only after certain amount

of endosperm is formed.

(ii) Groundnut seeds are exalbuminous and castor seeds are albuminous.

(iii) Micropyle remains as a small pore in the seed coat of a seed.

(iv) Integuments of an ovule harden and the water content is highly reduced, as the seed matures.

(v) Apple and cashew are not called true fruits.



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25. (a) Draw a labelled diagram of L.S. of an embryo of grass (any six labels.).

(b) Give reason for each of the following : (i) anthers of angiosperm flowers are described as dithecous . (ii) hybrid seeds have to be produced year after year.



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26. (a) Draw a diagrammatic sectional view of a mature anatropous ovule and label the following parts in it :

(i) that develops into seed coat.

(ii) that develops into an embryo after fertilization.

(iii) that develops into an endosperm in an albuminous seed.

(iv) through which the pollen tube gains entry into the embryo sac.

(v) that attaches the ovule to the placenta.

(b) Describe the characteristic features of wind pollinated flowers.



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27. (a) Draw a labelled schematic diagram of the transverse section of a mature anther of an angiosperm plant.

(b) Describe the characteristic features of an insect pollinated flower.



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28. (a) Draw a diagram of a mature embryo sac of an angiosperm and label the following parts in it :

(i) Filiform apparatus (ii) Synergids

(iii) Central cell (iv) Egg cell

(v) Polar nuclei (vi) Antipodals

(b) Write the fate of egg cell and polar nuclei after fertilization.



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29. a) Draw a L.S. of a pistil showing pollen tube entering the embryo-sac in an angiosperm and label any six parts other than

stigma, and ovary.

b) Write the changes a fertilized ovule undergoes within the ovary in an angiosperm plant.

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30. (a) Explain the phenomenon of double fertilization .

(b) Draw a labelled diagram of a typical anatropous ovule.

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31. a) Why does endosperm development proceed development in angiosperm seeds? State the role of endosperm in mature albuminous seeds.

b) Describe with the help of three labelled diagrams the

different embryonic stages that include mature embryo of dicot plants.



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32. A flower of tomato plant following the process of sexual reproduction produces 240 viable seeds.

Answer the following questions giving reasons :

- (a) What is the minimum number of pollen grains that must have been involved in the pollination of its pistil ?
- (b) What would have been the minimum number of ovules present in the ovary ?
- (c) How many megaspore mother cells were involved ?
- (d) what is the minimum number of microspore mother cells involved in the above case ?
- (e) How many male gametes were involved in this case ?



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33. A flower of brinjal plant, following the process of sexual reproduction , produces 360 viable seeds. Answer the following questions giving reasons:

- (a) How many ovules are minimally involved ?
- (b) How many megaspore mother cells are involved ?
- (c) What is the minimum no. of pollen grains that must land on stigma for pollination ?
- (d) How many male gametes are involved in the above case ?
- (e) How many microspore mother cells must have undergone reduction division prior to dehiscence of anther in the above case ?



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34. A flower of tomato plant following the process of sexual reproduction produces 200 viable seeds.

Answer the following question giving reasons:

What would have been the minimum number of ovules present

ii) per-pollinated pistil ?

How many microspore mother cells would minimally be required to produce requisite number of pollen grains ?

How many pollen grains must have minimally pollinated the carpel ?

(d) How many male gametes would have used to produce these 200 viable seeds ?

How many megaspore mother cells were required in this process?



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35. (a) As a senior biology student you have been asked to demonstrate to the students of secondary level in your school, the procedure(s) that shall ensure cross-pollination in a hermaphrodite flower. List the different steps that you would suggest and provide reasons for each one of them.

(b) Draw a diagram of a section of a megasporangium of an angiosperm and label funiculus, micropyle, embryo sac and nucellus.



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36. (a) When a seed of an orange is squeezed, many embryos, instead of one are observed. Explain how it is possible.

(b) Are these embryos genetically similar or different?

Comment.



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37. Read the following statement and answer the questions that follows:

"A guava fruit has 200 viable seeds."

a) What are viable seeds?

b) Write the total number of:

i) Pollen grains , ii) Gametes in producing 200 viable guava seeds.

c) Prepare a flow-chart to depict the post-pollination events leading to viable-seed production in a flowering plant.



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38. A flower of brinjal has 520 ovules in its ovary . However, it produces a fruit with only 480 viable seeds.

(a) What could have prevented the rest of the 40 ovules from

maturing into viable seeds? Explain giving a reason.

(b) Describe the development of a dicot embryo in a viable seed .

(c) Why certain angiospermic seeds are albuminous while others exalbuminous ? Explain.



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39. (a) A capsicum flower has 240 ovules in its ovary . But , it produces a fruit with only 180 viable seeds.

Explain giving a reason that could be responsible for such a result.

(b) Describe the development of an endosperm in a viable seed.

Why does endosperm development precedes embryo development ?

(c) Give an example of an angiosperm seed that has a perisperm . Name the part the perisperm develops from.



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40. (a) Describe any two devices in a flowering plant which prevent both autogamy and geitonogamy.

(b) Explain the events upto double fertilization after the pollen tube enters one of the synergids in an ovule of an angiosperm .



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41. (a) Draw a diagrammatic sketch of a transverse section of an anther of an angiosperm . Label its different walls and the tissue forming microspore mother cells.

(b) Describe the process of microsporogenesis upto the formation of a microspERM.

(c) Write the function of 'germ pore' in a pollen grain of an angiosperm.



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Analytical Questions With Answers

1. Pea flowers produce assured seed sets. Give a reason.

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2. An anther with malfunctioning tapetum often fails to produce viable male gametophytes . Give one reason

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3. How does the floral pattern on Mediterranean orchid *Ophrys* guarantee cross pollination ?

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4. Why is tender coconut considered a healthy source of nutrition ?

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5. What is the function of exine of an angiosperm pollen grains ?
Name the organic materials, it is made up of .

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6. Why are beehives kept in crop field during flowering period?
Name any two crop fields where this is practiced.

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7. Observe the figure carefully and give the answer of the following questions :

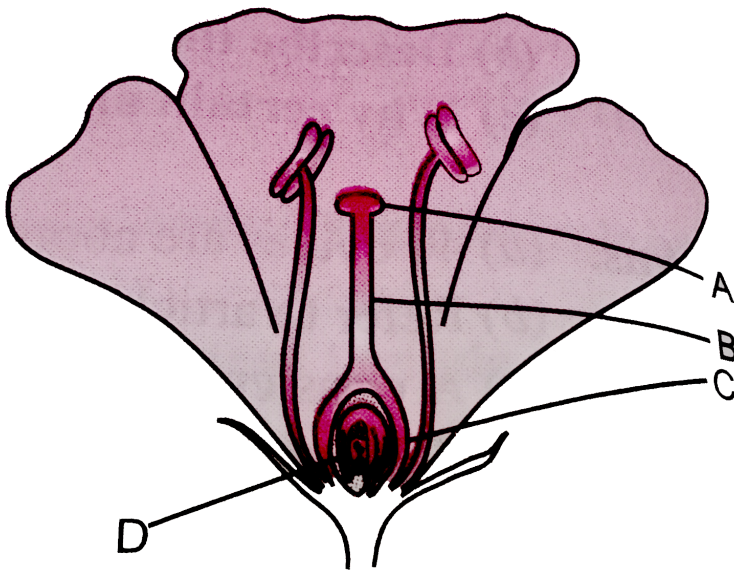
(a) Write whether ovary is superior or inferior ?

(b) What is the type of flower- hypogynous, perigynous or epigynous ?

(c) What type of ovule is shown in figure ?

(d) What changes occur in C after fertilization ?

(e) What does A,B,C,D represent in the figure.



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8. Do you think the microspores and pollen grains are the same structure . If they are different then what is the basic difference between them ?

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9. Which one of the following is responsible for supplying nourishment to the developing embryo ? Answer giving reasons.

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10. Two students A and B received unknown floral parts. Characteristics of the part received by A are -

(i) It is 7 celled 8 nucleate structure, and (ii) It develops from

single megaspore . The characteristics of the part received by B are -

(i) It is haploid and contains the male gametophyte , and (ii) It has two wall layers- the outer is made of sporopollenium and the inner is made of cellulose and pectin. Identify the parts.



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11. Each pollen grain produces tow male gametes. How many pollen grains will be required to fertilise 4 ovules present in a particular carpel ? Give reasons in support of your answer.



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12. Name the following structures:

(a) Single cotyledon of the monocotyledonous embryo of grass

family.

- (b) The portion of embryonal axis above the level of cotyledons in dicotyledonous embryo.
- (c) Occurrence of more than one embryo in a seed.
- (d) Seedless fruits produced without fertilization.

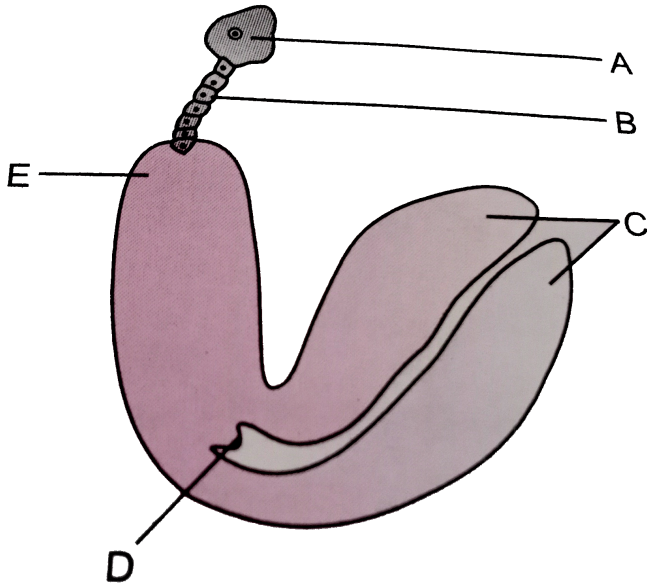


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13. Observe the figure and answer the following questions:

- (a) What does A,B,C,D and E represent in the given figure?
- (b) What type of embryo is shown in figure ?

(c) What is the function of A and B ?



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14. What plant structures are seen by observing a drop of honey under compound microscope ? What does it indicate ?

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15. Is it possible to store pollen grain ? What do we call the process of pollination using pollen grains of desired plant?



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16. Name the following activities :

(a) Removal of anther from the bisexual flower bud to make it a female flower.

(b) Covering of such flowers whose anther have been removed to prevent contamination of its stigma with unwanted pollen.

(c) Sprinkling of desired pollen grain over the stigma of such flower.



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17. In summer season, Suman went to the market with his father to buy fruits and vegetables. His father purchased two green coconuts to drink coconut water to quench their thirst. Suman curiously asked his father a botany teacher, the following questions :

- (i) What is morphological nature of coconut water and what is its nutritive value ?
- (ii) Besides coconut water , what are other products obtained from coconut tree ?
- (iii) Which type of reproduction is involved in the formation of endosperm ?



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18. What are the important characteristics of angiospermic flowers which are pollinated with bats ? Name atleast one

chiropterophilous plant .



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Competition Focus Neet Aims Special Practice Questions | Multiple Choice Question

1. Through which cell of the embryosac, does the pollen tube enter the embryosac ,

- A. Egg cell
- B. Persistent synergid
- C. Degenerated synergid
- D. Central Cell

Answer: C



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2. When the ovule is curved and embryo sac becomes horse shoe shaped, such an ovule is called

- A. Amphitropous
- B. Circinotropous
- C. Atropous
- D. Anatropous .

Answer: A



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3. In a type of apomixis known as adventive embryony embryos develop directly from the

A. Nucellus or integuments

B. Zygote

C. synergids or antipodals in an embryo sac

D. Accessory embryo sacs in the ovule.

Answer: A



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4. When anthers and stigma mature at the same time it is called

A. homogamy

B. Syngamy

C. Allogamy

D. Fusion

Answer: A



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5. Double fertilization involves :-

- A. Fertilization of the egg by two male gametes
- B. Fertilization of two eggs in the same embryo sac by two sperms brought by one pollen tube .
- C. Fertilization of the egg and the central cell by two sperm brought by different pollen tubes
- D. Fertilization of the egg and central cell by two sperms brought by the same pollen

Answer: D



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6. Plants of which one of the following groups of genera are pollinated by the same agency ?

- A. Triticum, Cocos , Mangifera
- B. Ficus, Kigelia, Casuarina
- C. Salvia, Morus, Euphorbia
- D. Bombax , Butea , Bauhinia

Answer: D

7. Which one of the following is surrounded by a callose wall

- A. Male gamete
- B. Egg
- C. Pollen grain
- D. Microspore mother cell

Answer: D



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8. Male gametes in angiosperms are formed by the division of

- A. Generative cell
- B. Vegetative cell
- C. Microspore mother cell
- D. Microspore

Answer: A



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9. Identify the wrong statement regarding post fertilisation development

- A. The ovary wall develops into pericarp
- B. The outer integument of the ovule develops into tegmen.
- C. The fusion nucleus (triple fusion) develops into endosperm
- D. The ovule develops into seed .

Answer: B



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10. Double fertilization is the process in plant that includes:

- A. Syngamy and triple fusion
- B. Only triple fusion
- C. Development of antipodal cells
- D. None of the above.

Answer: A



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11. Endosperm is consumed by developing embryo in the seed of

- A. Pea
- B. Maize
- C. Coconut

D. Castor

Answer: A



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12. What does the filiform apparatus do at the entrance into or

Function of filiform apparatus is to

- A. It brings about opening of the pollen tube
- B. It guides pollen tube from a synergid to egg
- C. It helps in the entry of pollen tube into a synergid
- D. It prevents entry of more than one pollen tube into the
embryo sac

Answer: B

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13. Which one of the following pairs of plant structures has haploid number of chromosomes

- A. Nucellus and antipodal cells
- B. Egg nucleus and secondary nucleus
- C. Megaspore mother cell and antipodal cells
- D. Egg cell and antipodal cells

Answer: D

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14. A typical angiosperm embryo sac at maturity is :-

A. 4 nucleate- 2 celled

B. 8 nucleate-7 celled

C. 4 nucleate -4 celled

D. 8 nucleate - 4 celled

Answer: B

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15. Select the correct order of endosperm types.



- A. Cellular , helobial, free nuclear
- B. Cellular, free nuclear , helobial
- C. Helobial , free nuclear, cellular
- D. Free nuclear, cellular , helobial

Answer: C



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16. Choose the mis-matched option

- A. Wind-Cannabis : Anemophily
- B. Water- Zoostera : Hydrophily
- C. Insects -Salvia : Entomophily
- D. Birds -Adansonia : Ornithophily

Answer: D



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17. One advantage of cleistogamy is

- A. It leads to greater genetic diversity .
- B. seed dispersal is more efficient and widespread .
- C. Seed set is not dependent on pollinators
- D. Each visit of a pollinator results in transfer of hundreds of pollen grains.

Answer: C



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18. Ornithophily is pollination by

A. Insects

B. Birds

C. Snails

D. Air

Answer: B



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19. Seedless banana is

A. Parthenocarpic fruit

B. Multiple fruit

C. Drupe fruit

D. True fruit

Answer: A



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20. A typical angiospermic embryo sac is 8 - nucleate and

A. single celled

B. Four celled

C. Seven celled

D. Eight celled

Answer: c



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21. In a mature embryo sac the central cell is

- A. Single nucleate
- B. Binucleate
- C. Four nucleate
- D. Eight nucleate .

Answer: B



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22. Embryo sac is to ovule as _____ is to an anther.

- A. Stamen
- B. Filament
- C. Pollen grain

D. Androecium

Answer: C



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23. A dicotyledonous plant bears flowers but never produces fruits and seeds. The most probable cause for the above 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.

Answer: D



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24. From among the sets of terms given below, identify those that are associated with the gynoecium.

- A. Stigma , ovule , embryo sac, placenta
- B. Thalamus, pistil , style , ovule
- C. Ovule, ovary, tapetum, embryos ac
- D. Egg, integument , embryo sac, nucellus

Answer: A



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25. The outermost and innermost wall layers of microsporangium in an anther are respectively

- A. Endothecium and tapetum
- B. Epidermis and endodermis
- C. Epidermis and middle layers
- D. Epidermis and tapetum .

Answer: D



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26. From the statement given below choose the option tht are true for a typical female gametophyte of a flowering plant :

- (i) It is 8- nucleate and 7-celled at maturity
- (ii) It is free nuclear during development

(iii) It is situated inside the integument but outside the nucellus

(iv) It has an egg apparatus situated at the chalazal end.

A. (i) and (iv)

B. (ii) and (iii)

C. (i) and (ii)

D. (ii) and (iv)

Answer: C



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27. In the embryos of a typical dicot and a grass, true homologous structures are

A. Coleorrhiza and Coleoptile

B. Coleoptile and Scutellum

C. Cotyledons and Scutellum

D. Hypocotyl and Radical

Answer: C



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28. The phenomenon wherein, the ovary develops into a fruit without fertilisation is called

A. Parthocarpy

B. Apomixis

C. Asexual reproduction

D. Sexual reproduction

Answer: A

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29. In a flower, if the megaspore mother cell forms megaspores without undergoing meiosis and if one of the megaspores develops into an embryo sac, its nuclei would be

- A. Haploid
- B. Diploid
- C. a few haploid and few diploid
- D. With varying ploidy

Answer: B

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30. While planning for an artificial hybridisation programme involving dioecious plants, which of the following steps would not be relevant?

- A. Bagging of female flower
- B. Dusting of pollen on stigma
- C. Emasculation
- D. Collection of pollen

Answer: C



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31. A particular species of plant produces light, non-sticky pollen in large numbers and its stigmas are long and feathery. These modifications facilitate pollination by

A. Insects

B. Water

C. Wind

D. Animals .

Answer: C



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32. The scutellum observed in a grain of wheat or maize is comparable to which part of the seed in other monocotyledons

A. Plumule

B. Cotyledon

C. Endosperm

D. Aleurone layer .

Answer: B



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33. In unilocular ovary with a single ovule the placentation is

- A. Axile
- B. Marginal
- C. Basal
- D. Free central

Answer: C



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34. Apomictic embryos in citrus arise from

- A. Diploid egg
- B. synergids
- C. maternal sporophytic tissue
- D. antipodal cells

Answer: C



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35. Wind pollinated flowers are

- A. small producing nectar and dry pollen
- B. small brightly colored producing large number of pollen grains
- C. small producing large no. of pollen grains

D. large producing abundant nectar and pollen.

Answer: C



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36. Transfer of pollen grains from anther to the stigma of another flower on the same plant is called

A. autogamy

B. xenogamy

C. geitonogamy

D. Karyogamy

Answer: C



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37. Exine in pollen grain is made up of

- A. Pectocellulose
- B. Lignocellulose
- C. sporopollenin
- D. pollen kit

Answer: C



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38. In double fertilization

- A. Two male gametes fuse with two eggs

B. one male gamete fuses with the egg and the other fuses with secondary nucleus .

C. One male gametes fuses with egg and the other fuses with antipodal .

D. one male gamete fuses with antipodal and the other fuses with diploid nucleus.

Answer: B



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39. A typical dicotyledonous embryo consists of

A. Radical only

B. embryo axis only

C. cotyledons only

D. radical , embryonal axis and cotyledons.

Answer: D



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40. Synergids are

A. Haploid

B. Diploid

C. triploid

D. tetraploid

Answer: A



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41. The residual, persistent nucellus is called:

- A. perisperm
- B. pericarp
- C. integuments
- D. none of these

Answer: A



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42. At the time of shedding the number of nuclei present in an angiosperm pollen grain is

- A. one

B. one or two

C. two or three

D. only two

Answer: C



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43. Which of the following wall layers of anther play a predominant role in its dehiscence

A. Epidermis

B. Endothecium

C. Middle layers

D. Tapetum .

Answer: B



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44. The egg apparatus of angiosperms comprises

- A. an egg cell and two antipodals
- B. an egg and two synergids
- C. an egg and two polar nuclei
- D. an egg and central cell .

Answer: B



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45. Nucellar polyembryony is reported in species of

- A. Citrus
- B. Gossypium
- C. Triticum
- D. Brassica

Answer: A



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46. In which one of the following pollination is autogamous or

Pollination which occurs in closed flower is known as

- A. geitonogamy
- B. xenogamy
- C. chasmogamy
- D. cleistogamy

Answer: D



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47. Wind pollinated is common in

A. legumes

B. lilies

C. grasses

D. orchids .

Answer: C



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48. Selaginella and Salvinia are considered to represent a significant step toward evolution of seed habit because

- A. female gametophyte is free and gets dispersed like seeds
- B. female gametophyte lacks archegonia
- C. megaspores possess endosperm and embryo surrounded by seed coat
- D. embryo develops in female gametophyte which is retained on parent sporophyte .

Answer: D



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49. In angiosperms functional megaspore develops into

A. embryo sac

B. ovule

C. Endosperm

D. pollen sac

Answer: A



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50. Both, autogamy and geitonogamy are prevented in

A. Papaya

B. Cucumber

C. Castor

D. Maize

Answer: A



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51. Most resistance biological material is

Or

An organic substance that can withstand environmental extremes and cannot be degraded by any enzyme is

A. Cuticle

B. Sporopollenin

C. Lignin

D. Cellulose

Answer: B



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52. Even in absence of pollinating agents seed-setting is assured in

A. Commellina

B. Zostera

C. Salvia

D. Fig

Answer: A



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53. Innermost microsporangial wall layer that nourishes pollen grains is

- A. endodermis
- B. Endothecium
- C. tapetum
- D. sporogenous tissue

Answer: C



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54. Which one of the following statement is wrong ?

- A. When pollen is shed at two-celled stage, double fertilization does not take place
- B. Vegetative cell is larger than generative cell
- C. Pollen grain in some plants remain viable for months

D. Intine is made up of cellulose and pectine.

Answer: A



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55. What is the function of germ pore?

- A. Emergence of radicle
- B. Absorption of water for seed germination
- C. Initiation of pollen tube
- D. Releases of male gametes .

Answer: C



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56. Plants with ovaries having only one or a few ovules are generally pollinated by

- A. bees
- B. butterflies
- C. birds
- D. wind

Answer: D



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57. How many plants in the list given below have marginal placentation : Mustard, Gram, Tulip, Asparagus, Arhar, Sun hemp, Chilli, Chochicine, onion, Moong, Pea, Tobacco, Lupin

- A. Four

B. Five

C. Six

D. Three

Answer: C



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58. Advantage of cleistogamy is

A. more vigorous offspring

B. no dependence on pollinators

C. vivipary

D. higher genetic variability

Answer: B

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59. Which one of the following statement is correct ?

- A. Sporogenous tissue is haploid.
- B. Endothecium produces the microspores .
- C. Tapetum nourishes the developing pollen.
- D. Hard outer layer of pollen is called intine.

Answer: C

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60. Function of filiform apparatus is to :-

- A. Recognizes the suitable pollen at stigma

B. Stimulate division of generative cell

C. Produce nectar

D. Guide the entry of pollen tube .

Answer: D



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61. Male gametophyte with least number of cells is present in

A. Pteris

B. Funaria

C. Liliaceae

D. Pinus

Answer: C

62. Geitonogamy involves

- A. fertilization of a flower by the pollen from another flower of the same plant
- B. fertilization of a flower by the pollen from the same flower
- C. fertilization of a flower by the pollen from a flower of another plant in the same population
- D. fertilization of a flower by the pollen from a flower of another plant belonging to a distant population.

Answer: A

63. Male gametophyte in angiosperms produces:

- A. Three sperms
- B. Two sperms and a vegetative cells
- C. single sperm and a vegetative cell
- D. Single sperm and two vegetative cells.

Answer: B



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64. Coconut water from a tender coconut is:

- A. Degenerated nucellus
- B. Immature embryo
- C. Free nuclear endosperm

D. Innermost layers of the seed coat

Answer: C

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65. Filiform apparatus is characteristic feature of :

A. Synergids

B. Generative cell

C. Nucellar embryo

D. Aleurone cell.

Answer: A

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66. The wheat grain/maize grain has an embryo with one, large, shield shaped cotyledon known as:

- A. Coleoptile
- B. Epiblast
- C. Coleorrhiza
- D. Scutellum

Answer: D



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67. Which one of the following fruits is parthenocarpic

- A. Banana
- B. Brinjal

C. Apple

D. Jackfruit

Answer: A



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68. In angiosperm , microsporogenesis and megasporogenesis :

A. Occur in ovule

B. Occur in anther

C. Form gametes without furthers divisions

D. Involve meiosis

Answer: D



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69. The coconut water from tender coconut represents

- A. Fleshy mesocarp
- B. Free nuclear proembryo
- C. Free nuclear endosperm
- D. Endocarp

Answer: C



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70. Which of the following statement is not correct ?

- A. Insects that consume pollen or nectar without bringing about pollination are called pollen/ nectar robbers.

- B. Pollen germination and pollen tube growth are regulated by chemical components of pollen interacting with those of the pistil
- C. some reptiles have also been reported as pollinators in some plant species
- D. Pollen grains of many species can germinate on the stigma of a flower, but only one pollen tube of the same species grows into the style.

Answer: D



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71. Seed formation without fertilization in flowering plants involves the process of

- A. Budding
- B. somatic hybridization
- C. Apomixis
- D. Sporulation

Answer: C



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72. Which one of the following statements is not true?

- A. Exine of pollen grains is made up of sporopollenin
- B. Pollen grains of many species cause severe allergies
- C. Stored pollen in liquid nitrogen can be used in the crop breeding programmes

D. Tapetum helps in the dehiscence of anther .

Answer: D



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73. In majority of angiosperms

A. egg has a filiform apparatus

B. there are numerous antipodal cells

C. reduction division occurs in the megaspore mother cell

D. a small central cell is present in the embryo sac

Answer: C



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74. Pollination in water by hyacinth and water lily is brought about by the agency of:

- A. water
- B. insects or wind
- C. birds
- D. bats

Answer: B



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75. the ovule of an angiosperm is technically equivalent to

- A. megasporangium
- B. megasporophyll

C. megaspore mother cell

D. megaspore

Answer: A



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76. Functional megaspore in an angiosperm develops into

A. endosperm

B. embryo sac

C. embryo

D. ovule

Answer: B



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77. Attractants and reward are required for

- A. entomophily
- B. hydrophily
- C. cleistogamy
- D. anaemophily

Answer: A



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78. Flowers which have single ovule in the ovary and are packed into inflorescence are usually pollinated by

- A. bee

B. wind

C. bat

D. water

Answer: B



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79. A dioecious flowering plant prevents both

A. autogamy and geitonogamy

B. geitonogamy and xenogamy

C. cleistogamy and xenogamy

D. autogamy and xenogamy

Answer: A



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80. Which of the following flowers only once in its life-time

A. Bamboo species

B. Jackfruit

C. Mango

D. Papaya

Answer: A



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81. Which of the following has proved helpful in preserving pollen of fossils

- A. Pollenkitt
- B. Cellulosic Intine
- C. Oil content
- D. Sporopollenin

Answer: D



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82. Which one of the following plants shows a very close relationship with a species of moth, where none of the two can complete its life cycle without the other

- A. Hydrilla
- B. Yucca
- C. Banana

D. Viola

Answer: B



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83. Double fertilization is

- A. fusion of two male gametes of a pollen tube with two different eggs
- B. fusion of one male gamete with two polar nuclei
- C. fusion of two male gametes with one egg
- D. syngamy and triple fusion.

Answer: D



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1. Assertion. Dichogamy refers to maturation of male and female sex organs at different times.

Reason . This is a safeguard against cross-pollination .

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: C

2. Assertion. Some fruits are seedless or contain empty or non viable seeds.

Reason . They are produced without fertilization .

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: A

3. Assertion. Meiosis and sexual fusion are essential in sexual reproduction.

Reason. Meiosis and sexual fusion are not essential in asexual reproduction.

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: B



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4. Assertion. Entomophilous plants produce less pollen when compared to anemophilous plants.

Reason. The wastage of pollen is reduced to the minimum in entomophilous plants because of the directional pollination.

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: B



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5. Assertion. The time involved between pollination and fertilization varies from species to species

Reason. All the pollen that reach the stigma succeed in affecting fertilization .

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: C



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6. Assertion . Cross pollination results in healthy and stronger offsprings .

Reason . Due to phenomenon of hybrid vigour.

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: A



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7. Assertion. Red colour of flowers attracts butterflies and wasps, but not bees.

Reason . Bees are colour-blind to red.

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: A



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8. Assertion. A flower is a modified shoot .

Reason . All the floral parts are borne on the receptacle (or thalamus).

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .

C. If Assertion is true and but the Reason is false.

D. If both Assertion and Reason are false.

Answer: B



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9. Assertion. The endosperms is generally triploid ($3n$).

Reason. It develops from primary endosperm nucleus formed by fusion of haploid male gamete and diploid secondary nucleus.

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: A



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10. Assertion. Self pollination occurs in Pteridophytes and monocots.

Reason. Cross pollination occurs in gymnosperm and dicots.

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: D



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11. Assertion. Fruits are formed only in angiosperm .

Reason . Fruits develop from ovaries which are found only in angiosperm .

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .

C. If Assertion is true and but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A



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12. Assertion . Seeds are found in gymnosperms and angiosperm

.

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: B



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13. Assertion. In apomixis , plants of new genetic sequence are produced.

Reason. In apomixis , two individuals of same genetic sequence meet .

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: D



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14. Assertion. A pollen grain of angiosperm is considered as the male gametophyte .

Reason. All the nuclei of the pollen grain produce male gametes.

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: C



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15. Assertion. Flowers are structures of sexual reproduction .

Reason. Various embryological processes of plants occur in the flower.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .

C. If Assertion is true and but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A



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16. Assertion : Insects visit flowers to gather honey

Reason : Attraction of flower prevents the insect from damaging other part of the plant.

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: D



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17. Assertion : The megaspore mother cell divides mitotically to produce four spores

Reason : Megaspore mother cells are diploid and megaspore is haploid.

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: B



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18. Assertion. Seeds fails to germinate at very low and high temperature .

Reason. Seeds sown deep into the soil fail to germinate .

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: B



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19. Assertion . Female gametophyte in angiosperm is eight nucleate .

Reason. Double fertilisation occurs in angiosperm .

- A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion .
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion .
- C. If Assertion is true and but the Reason is false.
- D. If both Assertion and Reason are false.

Answer: B



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