



Sexual Reproduction in Flowering Plants Important Questions With Answers

NEET Biology 2023

1. Which of the following has proved helpful in preserving pollen as fossils?
a) Oil content b) Cellulosic intine c) Pollenkitt **d) Sporopollenin**

Solution : -

The exine of the pollen grain is made up of sporopollenin which is one of the most resistant material known. It can withstand high temperatures and strong acids and alkali. No enzyme can degrade it.

2. The megasporangium is equivalent to:
a) Embryo b) Nucellus **c) Ovule** d) Fruit

Solution : -

Fact.

3. Functional megaspore in an angiosperm develops into
a) Ovule b) Endosperm **c) Embryo sac** d) Embryo

Solution : -

The functional megaspore develops into the female gametophyte (embryo sac).

4. Genetically self but functionally cross-pollination is
a) Autogamy b) Allogamy **c) Geitonogamy** d) Xenogamy
5. Tetrad of megaspores produced from megaspore mother cell is mostly
a) Isobilateral **b) Linear** c) Tetrahedral d) Decussate
6. Choose the mismatched pair.
a) **Cannabis** - Anemophily b) **Zostera** - Hydrophily c) **Salvia** - Entomophily
d) Adansonia - Ornithophily

Solution : -

In Adansonia cross pollination takes place through bat. This type of pollination is called chiropterophily.

7. Assertion: In most angiosperms, microspores of a tetrad grow and separate from one another shortly after meiosis.
Reason: In the members of families Orchidaceae and Asclepiadaceae, all the pollen grains of a sporangium remain united to form a compact structure called pollinium.
a) If both assertion and reason are true and reason is the correct explanation of assertion
b) If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false. d) If both assertion and reason are false.

8. The two celled stage at which pollen grains are discharged include
a) Larger generative cell and smaller vegetative cell b) Larger vegetative cell and smaller body cell
c) Smaller vegetative cell and larger body cell **d) Smaller generative cell and larger vegetative cell**

9. Assertion : The method of development of embryo sac from a single functional megaspore is termed as monosporic development.

Reason: In monosporic (Polygonum) type of embryo sac development, usually the megaspore which is situated towards micropylar end remains functional

- a) If both assertion and reason are true and reason is the correct explanation of assertion
- b) If both assertion and reason are true but reason is not the correct explanation of assertion
- c) If assertion is true but reason is false**
- d) If both assertion and reason are false

Solution : -

In monosporic (Polygonum) type of development of embryo sac, only one megaspore situated towards chalazal end remains functional. The remaining three megaspores gradually degenerate and finally disappear. The functional haploid megaspore enlarges in size and by means of three successive mitotic divisions, gives rise to an eight-nucleate embryo sac. This type of embryo sac development occurs in a majority of flowering plants and the common example is Polygonum.

10. 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

Solution : -

Light, non-sticky pollens produced in large numbers and long and feathery stigma are characteristics of anemophilous plants. Maize, Cannabis and many grasses are some of the examples of this category.

11. Although in most of species fruits are result of fertilisation, there are a few species in which fruit develop without fertilisation - process is known as

- a) Parthenocarp**
- b) Parthenogenesis
- c) Amphimixis
- d) Apomixis

12. A dithecous anther consists of (i) microsporangia, (ii) in each lobe.

a)	b)	c)	d)
(i) (ii)	(i) (ii)	(i) (ii)	(i) (ii)
fourtwo	twoone	two two	fourone

Solution : -

Stamen or male reproductive organ of a flower is made up of two parts- a stalk-like filament and a knob like terminal anther. Each anther has two lobes which are attached at the back by a sterile band called connective. When both the anther lobes are present, the stamen is called bithecous (or dithecous). A dithecous anther is tetrasporangiate having four microsporangia. Each lobe has two microsporangia separated by a strip of sterile tissue. When a single anther lobe is present, the stamen is termed as monothecous.

13. Both autogamy and geitonogamy are prevented in

- a) Castor
- b) Maize
- c) Papaya**
- d) Cucumber

Solution : -

Papaya is dioecious and therefore xenogamy is a rule

14. the coconut water from tender coconut that you are familiar with is

- a) Nuclear endosperm**
- b) Cellular endosperm
- c) Helobial endosperm
- d) All

15. Match column I with column II and select the correct option from the given codes.

Column I	Column II
A. Funicle	i) Mass of parenchymatous cells
B. Hilum	ii) Basal part of ovule
C. Integument	iii) One or two protective layers of ovule
D. Chalaza	iv) Region where body of ovule fuses with funicle
E. Nucellus	v) Stalk of ovule

- a) A-(i), B-(ii), C-(iii), D-(iv), E-(v) **b) A-(v), B-(iv), C-(iii), D-(ii), E-(i)** c) A-(iv), B-(ii), C-(i), D-(iii), E-(v)
 d) A-(i), B-(iii), C-(v), D-(ii), E-(iv)

16. Which one of the following is false fruit?

- a) Apple b) Strawberry c) Cashew **d) All**

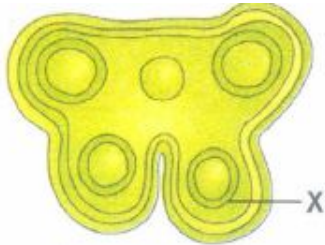
17. Chasmocleistogamous flower are present in

- a) Viola (common pans) b) Oxalis c) Commelina **d) All the above**

18. Megasporangium along with its protective integuments is called

- a) ovary **b) ovule** c) funicle d) chalaza

19. The function of labelled part X is



- a) dehiscence b) mechanical **c) nutrition** d) protection.

Solution : -

The tapetal layer is of great physiological significance as all the food material entering into the sporogenous tissue diffuses through this layer. Ultimately the cells of tapetal layer disorganise. Thus, tapetum makes a nutritive layer for the developing microspores or pollen grains.

20. Pollen grain along with the growing tube has how many haploid nuclei?

- a) One b) Two **c) Three** d) Four

21. Which of the given statements are true?

- (i) During the development of a dicot embryo, heart-shaped embryo is followed by globular embryo.
 (ii) The part of embryonal axis above the level of cotyledons is epicotyl, while the part below the level of cotyledons is hypocotyl.
 (iii) Monocot seeds possess a single cotyledon represented by scutellum.

- a) (i) and (ii) **b) (ii) and (iii)** c) (i) and (iii) d) (i), (ii) and (iii)

Solution : -

During the development of dicot embryo, initially the dicot embryo is globular and undifferentiated. Early embryo with radial symmetry is called proembryo. It is transformed into embryo with the development of radicle, plumule and cotyledons. Two cotyledons differentiate from the sides with a faint plumule in the centre. At this time the embryo becomes heart-shaped. Part of embryo axis between the plumule and cotyledonary node is epicotyl (above the level of cotyledons) while the part between radicle and cotyledonary node is called hypocotyl (below the level of cotyledons). The single cotyledon of monocotyledonous seed (e.g. maize grain) is called scutellum. It occupies the major portion of the embryo regions of grain.

22. Polygonum type of embryo sac is:

- a) 8-nucleate, 7-celled** b) 8-nucleate, 8-celled c) 7-nucleate, 7-celled d) 4-nucleate, 3 celled.

23. After pollination viability of pollen grains of when rice is about

- a) 30 min** b) 60 min c) 70 min d) 90 min

24. Identify the wrong statement regarding post-fertilisation development.

- a) The ovary wall develops into pericarp **b) The outer integument of ovule develops into tegmen**
 c) The fusion nucleus (triple nucleus) develops into endosperm d) The ovule develops into seed

Solution : -

After fertilisation, the integuments of the ovule form the protective coats (seed coats). Outer integument develops into testa and the inner one develops into tegmen

25. Which one of the following pollination is autogamous?
a) **Cleistogamy** b) Suspensor c) Egg d) Synergid

Solution : -

Autogamy is bound to happen in cleistogamous flowers as the anther and stigma lie close to each other since the flower does not open

26. Which of the following statements regarding the structure of microsporangium are correct?
(i) Microsporangium is generally surrounded by four wall layers - epidermis, endothecium, middle layers and tapetum.
(ii) Outer three layers perform functions of protection and dehiscence of anthers.
(iii) Cells of tapetum undergo meiosis and produce microspore tetrads.
a) (i) and (ii) b) (ii) and (iii) c) (i) and (iii) **d) (i), (ii) and (iii)**

Solution : -

A microsporangium or future pollen sac is a cylindrical sac which appears circular in transverse section. It consists of two parts, outer wall and central homogeneous sporogenous tissue. Microsporangial wall has four types of layers - epidermis, endothecium, 1-3 middle layers and tapetum. The outer three layers perform the function of protection in the young anther and mechanism of dehiscence in the ripe anther.

27. Which of the following options is correct?
a) Transfer of pollen grains from the anther to the stigma of the same flower - Autogamy
b)
Transfer of pollen grains from the anther of one flower to the stigma of another flower of same plant - Geitonogamy
c)
Transfer of pollen grains from the anther to the stigma of a genetically different plant of same species - Xenogamy
d) All of these

28. The phenomenon wherein, the ovary develops into a fruit without fertilisation is called
a) **parthenocarpy** b) apomixis c) asexual reproduction d) sexual reproduction

Solution : -

Fertilised ovary is technically called fruit. But if ovary develops into fruit, without fertilisation, it is called parthenocarpic fruit. Such fruits are generally seedless. Some common examples found in nature are: Citrus, banana, etc. Parthenocarpy can be artificially induced too by application of certain plant hormones, especially, auxins and gibberellins.

29. A characteristic of entomophilous pollen grains is presence of
a) Powdery nature **b) Sticky pollen kitt material** c) Carotenoids d) Ubisch bodies
30. Science of cultivation, breeding, marketing and arrangement of flowers is called
a) arboriculture b) floriculture c) horticulture **d) anthology**
31. How many meiotic divisions are required for the formation of 200 seeds of Capsella
a) 200 b) 400 **c) 250** d) 300

32. Pollen tube is produced by
a) Exine **b) Intine** c) Both exine and intine d) Generative cell
33. In angiosperms, microsporogenesis and megasporogenesis
a) Occur in ovule b) Occur in anther c) Form gametes without further divisions **d) Involve meiosis**

34. Match column I with column II and select the correct option from the given codes

Column I	Column II
A. Monoecious	(i) Primula
B. Dioecious	(ii) Maize
C. Cleistogamous	(iii) Date palm
D. Heterostyly	(iv) Commelina

a)	b)	c)	d)																																
<table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td></tr> <tr><td>iii</td><td>ii</td><td>iv</td><td>i</td></tr> </table>	A	B	C	D	iii	ii	iv	i	<table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td></tr> <tr><td>ii</td><td>iii</td><td>iv</td><td>i</td></tr> </table>	A	B	C	D	ii	iii	iv	i	<table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td></tr> <tr><td>ii</td><td>iii</td><td>iv</td><td>i</td></tr> </table>	A	B	C	D	ii	iii	iv	i	<table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td></tr> <tr><td>i</td><td>ii</td><td>iii</td><td>iv</td></tr> </table>	A	B	C	D	i	ii	iii	iv
A	B	C	D																																
iii	ii	iv	i																																
A	B	C	D																																
ii	iii	iv	i																																
A	B	C	D																																
ii	iii	iv	i																																
A	B	C	D																																
i	ii	iii	iv																																

35. Arising from placenta is megasporangium which is commonly known as
a) Ovule b) Ovary c) Ovaration cavity d) Stamen
36. Assertion: In *Cocos nucifera*, coconut water represents the cellular endosperm and the surrounding white kernel represents the free-nuclear endosperm.
Reason: Endosperm is always completely consumed by developing embryo before seed maturation.
a) If both assertion and reason are true and reason is the correct explanation of assertion
b) If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false **d) If both assertion and reason are false**

Solution : -

In *Cocos nucifera* (coconut), the coconut water represents free-nuclear endosperm and the surrounding kernel represents the cellular endosperm. Endosperm may either be completely consumed by the developing embryo (e.g., pea, groundnut, beans) before seed maturation or it may persist in mature seed (e.g., castor, coconut) and is used during seed germination.

37. In which of the following fruits is the edible part the aril?
a) Pomegranate b) orange **c) Litchi** d) Custard apple
38. Which is the most logical sequence with reference to the life cycle of angiosperm
a) Germination, endosperm formation, seed dispersal, double fertilization
b) Cleavage, fertilization, grafting, fruit formation c) Pollination, fertilization, seed formation & germination
d) Maturation, mitosis, differentiation
39. An embryo may sometimes develop from any cell of embryo sac other than egg. It is termed as
a) apospory **b) apogamy** c) parthenogenesis d) parthenocarpy

Solution : -

Apogamy is the reproduction without the fusion of gametes and usually without meiosis. The term may include any form of vegetative reproduction. The production of a diploid gametophyte from the sporophyte due to the absence of meiosis is known as apospory. Parthenogenesis is the development of unfertilised egg into a complete individual without fertilisation. Production and development of seedless fruits is called parthenocarpy.

40. Which is correct?
a) Tapetum nourishes the developing pollen b) Hard outer layer of pollen is called intine
c) Sporogenous tissue is haploid d) Endothecium produces the microspore

Solution : -

Tapetum nourishes the developing pollen grains.

41. The part of castor seed that yields oil is
a) Cotyledon b) Caruncle c) Endosperm **d) nucellus**
42. The exine of pollen grains (micropores) is composed of
a) Pectin b) α -cellulose **c) Sporopollenin** d) Lignin
43. The part of pistil which acts as landing platform for pollen grain is
a) Stigma b) Style c) Ovule d) Ovary

44. What is the function of filiform apparatus in an angiospermic embryo sac?
 a) Brings about opening of the pollen tube **b) Guides the pollen tube into a synergid**
 c) Prevents entry of more than one pollen tube into a synergid d) None of these
45. Select the incorrect pair of type of pollination and the corresponding pollinating agency.
 a) Anemophily - Wind b) Hydrophily - Water c) Ornithophily - Birds **d) Chiropterophily - Insects**

Solution : -

Chiropterophily is pollination by bats.

46. How many meiotic divisions are required for the formation of 100 pollen grains?
 a) 100 b) 50 **c) 25** d) 26

Solution : -

Each microspore mother cell or pollen mother cell (PMC) on reduction division (meiosis) gives rise to 4 pollen grains. Hence, to form 100 pollen grains, 25 meiotic divisions are required.

47. What is the ploidy primary endosperm nucleus (Pen) in angiosperm?
 a) Haploid b) Diploid **c) Triploid** d) Hexaploid

48. Match column I with column II and select the correct option from the given codes.

Column I	Column II
A. Tallest flower	(i) Maize
B. Pronuba moth	(ii) Amorphophallus
C. Anemophily	(iii) Salvia
D. Entomophily	(iv) Yucca

- a) A-(ii), B-(iv), C-(i), D-(iii)** b) A-(ii), B-(iv), C-(iii), D-(i) c) A-(iii), B-(ii), C-(i), D-(iv)
 d) A-(iv), B-(iii), C-(ii), D-(i)

49. Nonessential floral organs in a flower are
a) sepals and petals b) anther and ovary c) stigma and filament d) petals only

Solution : -

Anther and filament are the parts of male reproductive organ of flower called stamen whereas stigma, style and ovary are parts of female reproductive organ of flower called carpel. They are called essential floral organs. Sepals and petals are accessory or non-essential floral organs as they have only supportive role.

50. Assertion: A typical microsporangium of angiosperms is generally surrounded by four wall layers - epidermis, endothecium, middle layers and tapetum.

Reason : The outer three wall layers perform the function of protection and help in dehiscence of anther to release the pollen.

- a) If both assertion and reason are true and reason is the correct explanation of assertion
b) If both assertion and reason are true but reason is not the correct explanation of assertion
 c) If assertion is true but reason is false. d) If both assertion and reason are false.