

SEXUAL REPRODUCTION IN FLOWERING PLANTS

1. Pollination is
 - (A) Shedding of pollen from anthers
 - (B) Similar to fertilization of animals
 - (C) Transfer of pollen from anthers to stigmas
 - (D) Transfer of pollen from anthers to ovules

2. Xenogamy is
 - (A) Autogamy
 - (B) Cross pollination
 - (C) Self-pollination
 - (D) Cleistogamy)

3. In wheat, pollination is
 - (A) Wind pollination
 - (B) Insect pollination
 - (C) Bud pollination
 - (D) Herkogamy)

4. Longest microspores are seen in
 - (A) *Drimys*
 - (B) *Zostera*
 - (C) *Drosera*
 - (D) *Zygogynum*

5. In a flowering plant, archesporium gives rise to
 - (A) Only the wall of the sporangium
 - (B) Both wall and the sporogenous cell
 - (C) Wall and the tapetum
 - (D) Only tapetum and sporogenous cells

6. *Polygonum* type of embryo sac is
(A) 8- nucleate (B) 16-nucleate
(C) 24- nucleate (D) 32- nucleate
7. In potato, self-pollination is performed in
(A) bud condition
(B) cleistogamous condition
(C) bending of filaments to bring anthers in contact with stigma.
(D) style bends to bring stigma in contact with anthers.
8. The fibrous thickenings of endothecium are in the form of
(A) spiral bonds (B) radial bands
(C) annular bands (D) tangential bands
9. The phenomenon of polyteny is associated with which wall layer of the anther?
(A) Epidermis (B) Tapetum
(C) Endothecium (D) Middle layers
10. The fibrous thickening of endothecium is largely made up of
(A) pectin (B) suberin
(C) cutin (D) cellulose

11. The ubisch bodies are produced in the
(A) epidermis (B) endothecium
(C) middle layers (D) tapetum
12. Male gametophyte of angiosperms is
(A) anther lobe (B) pollen before germination
(C) pollen after germination (D) embryo sac
13. The endosperm of angiosperms is developed from
(A) antipodals (B) zygote
(C) synergids (D) secondary nucleus
14. What is the cotyledon of maize embryo called?
(A) Aleurone layer (B) Scutellum
(C) Plumule (D) Radicle
15. Night blooming flowers attract pollinating insects with the help of
(A) aroma (B) nectar
(C) edible pollen (D) all of these
16. Allogamy is favoured by
(A) homogamy (B) cleistogamy
(C) monoclony (D) dicliny

17. Ategmic ovules are found in
(A) *Utricularia* (B) *Nepenthes*
(C) *Olax* (D) *Rafflesia*
18. The obturator in *Euphorbia* develops from
(A) funicle (B) placenta
(C) outer integument (D) inner integument
19. The type of megaspore tetrad most commonly formed in angiosperms is
(A) tetrahedral (B) linear
(C) T-shaped (D) decussate
20. In pea the ovule is
(A) hemianatropous (B) amphitropous
(C) anatropous (D) campylotropous
31. The male gametes of angiosperms are
(A) uniflagellate
(B) biflagellate
(C) non-motile as there is no flagellated stage in the life cycle of Angiosperms.
(D) None of the above

32. The arrangement of the nuclei in a normal embryo sac in the dicot plants is

- (A) 2 + 4 + 2 (C) 2 + 3 + 3
(B) 3 + 2 + 3
(D) 3 + 3 + 2

33. Meiosis occurs in

- (A) endosperm cells (B) intercalary meristems
(C) apical meristems (D) spore mother cells

34. Number of meiotic divisions required to produce 100 microspore in angiosperm is

- (A) 125 (B) 50
(C) 100 (D) 25

35. Pollen sac in *Cycas* is called

- (A) megasporophyll (B) megasporangium
(C) microsporophyll (D) microsporangium

36. Synergids are

- (A) hexaploid (B) haploid
(C) diploid (D) triploid

37. The point of attachment of funicle with the body of the ovule is

- (A) nucellus (B) chalaza

(C) micropyle

(D) hilum

38. In an embryo sac haustorial structure are formed from

(A) egg and synergids

(B) egg and antipodals

(C) synergids and antipodals

(D) egg, synergids and antipodals

39. Xenia refer to

(A) effect of pollen on stem

(B) effect of pollen on taste of fruit

(C) effect of pollen on vascular tissue

(D) effect of pollen on endosperm

40. If the meiosis occur in pollen sac and egg nucellus, it will be called

(A) zygotic meiosis

(B) gametic meiosis

(C) sporic meiosis

(D) all of these

41. Largest cell of the ovule is

(A) megaspore mother cell

(B) antipodal cell

(C) central cell

(D) size of cell variable

42. An anther having four microsporocytes shall produce pollen grains

- (A) 24 (B) 12
(C) 8 (D) 1

33. Poly ethylene glycol (PEG) is used in

- (A) Protoplast fusion (B) Embryoculture
(C) Fermentation (D) Protoplast isolation

34. The fibrous bands of thickening in anther are laid down

- (A) In the form of annuli
(B) In the form of radial bands
(C) In the form of spiral bands
(D) In the form of tangential strips

35. Ovule is ategmic in

- (A) *Helianthus* (B) Pea
(C) *Santalum* (D) *Brassica*

36. Which one of the following is the correct representation of the life cycle of a flowering plant

- (A) Thallus – archegonium – antheridium – sporangium – spore
(B) Seed – flower – pollen – ovule – zygote

(C) Thallus – conjugation tube – zygosporangium – spore – prothallus

(D) Seed – cone – ovule – pollen – zygote

37. Which of the following is a monocarpic plant

(A) Grape

(B) Banana

(C) Mango

(D) Pomegranate

38. Triple fusion in *Capsella* is affected by

(A) Fusion of male gamete with egg.

(B) Fusion of male gamete with synergids.

(C) Fusion of male gamete with nucellar cell.

(D) Fusion of male gamete with secondary nucleus.

39. Totipotent cell refers to

(A) An undifferentiated cell capable of developing into complete embryo.

(B) An undifferentiated cell capable of developing into an organ.

(C) An undifferentiated cell capable of developing into a system or entire plant.

(D) Cells which lack the capability of differentiating into an organ or system.

40. Sexual reproduction leads to
(A) Recombination (B) Parthenogenesis
(C) Apomixis (D) Polyploidy
41. Two rigid pointed hook-like structures are present in
(A) *Martynia* (B) *Cleome*
(C) *Xanthium* (D) *Achyranthes*
42. A plant raised from a single germinating pollen grain under cultural conditions is called a
(A) Haploid plant (B) Diploid plant
(C) Tetraploid plant (D) Polyploid plant
43. Siphonogamy in angiosperm means
(A) Tube like male gametes
(B) Motile male gametes
(C) Male gametes produced in a tube
(D) Male gametes are carried in a tube
44. The arrangement of the ovules on the lacentae developed from the central axis of the ovary is called
(A) Parietal placentation (B) Axile placentation
(C) Basal placentation (D) Marginal placentation

45. In position of ovary is below sepals and petals stamens, the flower is called

(A) Epigynous

(B) Perigynous

(C) Mesogynous

(D) Metagynous

ANSWERS

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|--------|-----|---------|---------|---------|
| 1. (C) | 5. | 2. (B) | 3. (C) | 4. (B) |
| (B) | 9. | 6. (A) | 7. (D) | 8. (B) |
| (B) | 13. | 10. (D) | 11. (D) | 12. (C) |
| (D) | 17. | 14. (B) | 15. (A) | 16. (D) |
| (C) | 21. | 18. (B) | 19. (B) | 20. (D) |
| (C) | 25. | 22. (B) | 23. (D) | 24. (D) |
| (D) | 29. | 26. (B) | 27. (D) | 28. (C) |
| (D) | 33. | 30. (B) | 31. (C) | 32. (D) |
| (A) | 38. | 34. (B) | 35. (C) | 37. (B) |
| (D) | 42. | 39. (C) | 40. (A) | 41. (A) |
| (A) | | 43. (D) | 44. (B) | 45. (A) |

SOLUTIONS

33. Naked protoplasts of the two types are made to fuse either by electrofusion or PEG.
34. Cells of endothecium develop fibrous thickening which is made of a cellulose with little pectin and lignin, in the form of radial bands arising from the inner tangential wall.
35. *Santalum*; an ovule without integument is called ategmic.

37. Monocarpic plants are those plants which produces flowers and fruits only once in life e.g. pea, mustard or all seasonal plants, banana. In triple fusion three nuclei get fused, two polar nuclei (which fuses to form secondary nucleus) and one male gamete. In *totipotency*, an undifferentiated cell of root, stem, ovary, embryo is put in nutrient culture medium then it develops in a whole plant. This process is called totipotency and such cell is regarded as totipotent cell. Sexual reproduction is the process of the development of new organisms through the formation and fusion of male and female gametes. Fruits of *Martynia* have hard hair and spine or hooks which help them to cling to the fur of birds and animals and are carried to distant places. Guha and Maheshwari reported culture of androgenic haploids of *Datura innoxia*. In seed plants fertilization is called siphonogamy because the male gametes are brought to the egg containing female gametophyte by a pollen tube. In axile placentation, placenta is attached to the central axis. When calyx and corolla arise from upper side of ovary it is called epigyny. Ovary is inferior and flower is epigynous.