



BIOLOGY

BOOKS - GR BATHLA & SONS BIOLOGY (HINGLISH)

SEXUAL REPRODUCTION IN FLOWERING PLANTS

Embryology

1. Essential organ of a flower are:

A. Calyx, Corolla, Perianth

B. Stamens, Gynoecium

C. Lodicules, Bracts, Bractioles

D. None of these

Answer: B



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2. Siphonogamy is characteristics of:

A. All spermatophytes

B. Only gymnosperms

C. Only angiosperms

D. Only pteridophytes

Answer: A



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3. Commelina benghalensis represents

A. Chasmo-cleistogamy

B. Xenogamy

C. Heterogamy

D. Geitonogamy

Answer: A



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4. Formation of new individual from a fertilized egg is known as:

A. Cytology

B. Conjugation

C. Genetics

D. embryology

Answer: D



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5. Advanced oogamous sexual reproduction is found in:

A. Bryophytes and Pteridophytes

B. Spermatophytes

C. Gymnosperms

D. All of the above

Answer: D



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6. Trioploids angiosperm individuals are :

A. Highly fertile

B. Normal

C. Sterile

D. Sterile and Seedless

Answer: D



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7. When a tetraploid individual is crossed with a diploid individual it produces triploid embryo, $5n$ endosperm and $4n$ fruit. In this cross the male individual is:

A. Diploid

B. Tetraploid

C. $2n$ or $4n$

D. None of these

Answer: A



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8. Embryonal tissue contains:

A. Chloroplasts

B. Chromatophores

C. Chromoplasts

D. Leucoplasts

Answer: D



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9. Self sterility refers to:

A. Production of sterile pollens

B. Production of absorptive ovules

C. Failure of pollens to germinate on stigma of its own flower

D. Failure of fertilization if the stigma is pollinated by the pollens of other plant

Answer: C



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10. Most delicate stage in the life cycle of angiosperm where maximum mortality is observed is its:

A. Seed stage

B. Flowering stage

C. Fruiting stage

D. Seedling stage

Answer: D



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11. Agamospermy includes:

A. Apospory

B. Apogamy

C. Adventile embryony

D. All of these

Answer: D



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12. Ovules are found attached at basal placentation in:

A. Asteraceae

B. Liliaceae

C. Cucurbitaceae

D. Malvaceae

Answer: A



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13. Protandry is found in:

A. *Hibiscus ros-sinensis*

B. *Abelmoschus esculentus*

C. Helianthus annuus

D. All of the above

Answer: C



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14. Pollination between flowers borne on two different plants of the same species refers to:

A. Geitonogamy

B. Xenogamy

C. Cleistogamy

D. Herkogamy

Answer: B



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15. Pronoba moth is specific pollinator of:

A. Evening primrose

B. Petunia

C. Yucca

D. Commelina

Answer: C



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16. Commelina produces:

A. Cleistogamous flowers

B. Chasmogamous flowers

C. Both types of flowers

D. Either cleistogamous or chasmogamous flowers at a time.

Answer: C



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17. Fusion of anthers with stigma in a flower results in formation of:

A. Pollinium

B. Gynostegium

C. Gynophore

D. Caudicles

Answer: B



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18. Pollination by water takes place in:

A. Eichhornia

B. *Nelumbo nucifera*

C. Hydrilla

D. All of these

Answer: C



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19. Flowers are always wind pollinated in family:

A. Compositae

B. Brassicaceae

C. Solanaceae

D. Poaceae

Answer: D



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20. Most resistant stage in the life cycle of angiosperms is its:

A. Seeding stage

B. Seed stage

C. Flowering stage

D. Fruiting stage

Answer: B



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21. In a maize comb, the silky hairs represent:

A. Long style

B. Long style with feathery stigma

C. Involucre of bracts

D. Hairs or pappus

Answer: B



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22. Stigma acts as

A. Receptive organ for pollens

B. An organ to promote the germination of
only desired pollens

C. An organ to discourage germination of
undesired pollens

D. All of the above

Answer: D



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23. Ovary to fruit formatioin in absence of fertiliazation refers to:

A. Parthenocarpy

B. Apogamy

C. Apospory

D. Parthengensis

Answer: A



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24. Anthesis refers to:

A. Opening of flower

B. Maturation of embryo

C. Pollination

D. Dehiscence of anther lobes

Answer: A



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25. Number of microsporangia in a dithecous anther is:

A. Only one

B. Two

C. Four

D. Many

Answer: C



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26. Inner most jacket layer of microsporangium is:

A. Endothecium

B. Tapetum

C. Inner layer

D. Archesporium

Answer: B



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27. During meiosis, a microscope mother cell has 12 bivalents, the number of chromosomes in its pollen grains will be:

A. 12

B. 24

C. 6

D. 18

Answer: A



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28. A microscope mother cell of *Cyperus* after meiosis gives rise to:

- A. 4- microspores
- B. A pollination
- C. Only two microspores
- D. Only one microscope

Answer: D



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29. Development of microsporangium in angiosperms and gymnosperms is of typical:

- A. Eusporangiate type
- B. Leptosporangiate type
- C. Monosporic type
- D. Tetrasporic type

Answer: A



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30. Microspore tetrad in dicots is usually:

- A. Linear type
- B. Isobilateral type
- C. Tetrahedral type
- D. T-shaped

Answer: C



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31. When a spore mother cell produces more than 4 spores, it refers to:

- A. Polyspermy
- B. Polyspory
- C. Polygamy
- D. Polyembryony

Answer: B



32. In anther, the endothecium lies in between:

- A. Tapetum and archesporium
- B. Archesporium and spors
- C. Inner layer and tapetum
- D. Epidermis and inner layer

Answer: D



33. Enzymes and hormones both are synthesized from :

- A. Endothecium
- B. Archesporium
- C. Tapetum
- D. Middle layer

Answer: C



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34. Endomitosis is often found in the cells of:

A. Zygote

B. Endosperms

C. Tapetum

D. Spore mother cells

Answer: C



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35. Archesporium refers to:

A. Jacket layer

B. Sporogenous layer

C. Tapetal layer

D. Outer most endosperm layer

Answer: B



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36. Perisperm is remnant of:

A. Integument

B. Nucellus

C. Embryo sac

D. Testa

Answer: B



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37. In ovule, meiosis occurs in:

A. Integument

B. Nucellus

C. Megaspores

D. Megaspore mother cells

Answer: D



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38. If $2n=24$, then 18 chromosomes will be found in:

A. Integument and nucellus

B. Body cell and tube cel

C. synergids and antipodals

D. None of the above

Answer: D



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39. The ploidy level is not the same in:

A. Integument and nucellus

B. Root tip and shoot tip

C. Secondary nucleus and endosperm

D. Antipodals and syndergids

Answer: C



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40. Carpel is homologous to:

A. Megasporangium

B. Megaspore

C. Megagametophyte

D. Megasporophyll

Answer: D



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41. Bitegmic ovules are found in:

A. Pisum

B. Cycas

C. Pinus

D. None of these

Answer: A



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42. Third integument is found in ovules of:

A. Nutmeg

B. Litchi

C. Asphodelus and Ricinus

D. All of these

Answer: D



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43. Horse-shoe shaped embryo sac is produced in:

A. Amphitropous ovule

B. Anatropous ovule

C. Circinotropous ovule

D. Campylotropous ovule

Answer: A



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44. Megaspore mother cell originates from :

- A. Superficial layer of nucellus
- B. Hypodermal cell of nuclellus
- C. Inner layer of integument
- D. Outer layer of integument

Answer: B



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45. Ovules are without integument in:

A. Santalum

B. Pisum

C. Litchi

D. Mango

Answer: A



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46. In seeds, testa is formed by dried:

A. Outermost layer of nuclellus

B. Outer integument

C. Third intergument

D. Pericarp

Answer: B



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47. Cotton fibres are surface outgrowth of:

A. Integument

B. Nucellus

C. Endosperm

D. Ovary wall

Answer: A



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48. Primitive angiosperms bear:

- A. Orthotropous ovules
- B. Anatropous ovules
- C. Campylotropous ovules
- D. Circinotropous ovules

Answer: A



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49. Ploidy level of endosperm varies markedly in embro sac of:

A. Monosporic type

B. Bisporic type

C. Tetrasporic type

D. Allium type

Answer: C



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50. Tapetal cells are usually:

- A. Haploid to diploid
- B. Diploid to polyploid
- C. Triploid only
- D. Polyploid only

Answer: B



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51. Pollen chamber is not found in the ovules of:

- A. Monocots
- B. Monocots and dicots
- C. Only dicots
- D. All of these

Answer: D



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52. A fertilized ovule is a sporophytic organ with a:

A. Newly developed gametophyte

B. Newly developed sporophyte in embryonal stage

C. Super sporophyte

D. None of the above

Answer: B



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53. Crassinucellate ovule shows:

- A. Absence of nuclellus
- B. Well developed nucellus
- C. Partially developed nucellus
- D. None of the above

Answer: B



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54. Tegmen of seed develops from:

A. Outer integument

B. Inner integument

C. Third integument

D. Nucellus

Answer: B



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1. Pollen tubes show:

A. Chemotactic movement

B. Thermotactic movement

C. Chemotropism

D. Chemonasty

Answer: C



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2. Prothallical cells are not produced in:

A. *Cycas* and *pinus*

B. *Ephedra*

C. Angiosperms

D. Spermatophytes

Answer: C



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3. In majority of angiosperms, pollens are discharged at:

A. 2- celled stage

B. 3-celled stage

C. 7-celled stage

D. 8 -celled stage

Answer: A



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4. The spermatogenous cells of male gametophyte is:

A. Vegetative cells

B. body cell

C. Generative cell

D. Stalk cell

Answer: C



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5. Pollina develop in:

A. Calotropis

B. Asclepias

C. Orchids

D. All of these

Answer: D



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6. Mature male gametophyte in angiosperms is:

A. 3-celled

B. 5-celled

C. 6-celled

D. Multicellular

Answer: A



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7. During microgametogenesis, two male gametes are produced from:

- A. Tube cell
- B. Generative cell
- C. Prothallial cell
- D. Stalk cell

Answer: B



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8. Linear spore tetrads are formed by:

- A. Microspore mother cells
- B. Megaspore mother cells
- C. Spore mother cells of Riccia
- D. All of the above

Answer: B



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9. 2-celled pollen grains of angiosperm represents:

A. Microspores

B. Partially developed male gametophyte

C. Mature male gametophyte

D. Male gametangium

Answer: B



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10. In a two-celled pollen:

- A. Generative cell is larger
- B. Vegetative nucleus is larger
- C. Vegetative cell is larger
- D. Body cell is larger

Answer: C



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11. In the life cycle of angiosperms, meiosis occurs when:

- A. Flowers formation begins
- B. Pollens are to be produced
- C. Ovules are fertilized
- D. Secondary nucleus is produced

Answer: B



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12. Male gametes are always non-motile in:

A. All red algae and angiosperms

B. In all gymnosperms

C. All spermatophytes only

D. In angiosperms only

Answer: A



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13. Sporopollenin is found in:

A. Outer wall of pollens

B. Inner wall of pollens

C. Pollen tube

D. Male gametes

Answer: A



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14. Ubisch-bodies are associated with the development of:

A. Endosperms

B. Embryo sac

C. Embryo

D. Pollens

Answer: D



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15. How many meiotic divisions are required to produce 104 male gametes?

A. 25

B. 2651

C. 13

D. 26

Answer: D



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16. Pollen grains accumulate excess of:

A. Proteins

B. Lipids and fats

C. Glucose

D. Starch

Answer: A



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17. A pollinium of Calotropis carries:

A. 10-20 pollens

B. 20-50 pollens

C. More than 100 pollens

D. Less than 10 pollens

Answer: C



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18. Pollens are produced in bulk in plants

showin:

A. Entomophily

B. Heterophylly

C. Anemophily

D. Hydrophily

Answer: C



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19. Pollination shows:

A. Lever mechanism

B. Rider mechanism

C. Sticking mechanism

D. None of these

Answer: B



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20. How many meiotic divisions are required to produce 100 pollens in *Cyperus*?

A. 25

B. 50

C. 100

D. 200

Answer: C



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21. Nutritive function is best seen in:

A. Eggs and synergids

B. Endosperms and tapetum

C. Male or female gametes

D. Endosperms and microspores

Answer: B



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22. Aril develops from:

A. Nucellus

B. Micropyle

C. Third integument

D. Funicle

Answer: C



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23. The structure of ovule that directs the growth of pollen tube towards micropyle is called:

- A. Funicle
- B. Obturator
- C. Aril
- D. Caruncle

Answer: B



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24. If $2n=12$, the number of chromosomes in nucleellus, integument and egg cell would be:

A. 12,12,6

B. 12,18,24

C. 12,12,12

D. 12,12,24

Answer: A



Megagametogenesis

1. Female gametangium of angiospermic plants is represented by:

- A. Ovules
- B. Embryo sac
- C. Egg apparatus
- D. Polars and Antipodals

Answer: B



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2. Fusion product of polars is:

- A. Synergids
- B. Antipodals
- C. Endosperm nucleus
- D. Secondary nucleus

Answer: D



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3. Polygonum type 7-celled embryo sac closely resembles to:

- A. Allium type embryo sac
- B. Adoxa type embryo sac
- C. Drusa type embryo sac
- D. All of these

Answer: D



4. During formation of mature embryo sac from megaspore, the megaspore undergoes:

- A. One meiotic and one mitotic divisions
- B. Two meiotic divisions
- C. Two mitotic divisions
- D. Three mitotic divisions

Answer: D



5. In a mature 7-celled or 8-nucleate embryo sac, the ploidy level of secondary nucleus is the same as that of:

- A. Synergids
- B. Antipodals
- C. Nucellus
- D. Polars

Answer: C



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6. In tetrasporic embryo sac, the endosperm is:

- A. Always triploid
- B. Always polyploid
- C. Only occasionally triploid
- D. None of the above

Answer: C



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7. For the formation of 40 embryos, how many meiotic divisions, in all are required?

A. 40

B. 50

C. 60

D. 80

Answer: A



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8. 4-celled embryo sac occurs in:

A. Polygonum type embryo sac

B. Oenothera type embryo sac

C. allium type embryo sac

D. None of the above

Answer: B



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9. At very early stage, the embryo derives nutrition from:"

- A. Female gametophyte
- B. Synergids and antipodals
- C. Polars
- D. None of the above

Answer: A



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10. An ovule with mature embryo sac represents a sporophyte body containing?

A. A gametophyte organ

B. Another sporophyte

C. Archesporium

D. Archegonium

Answer: A



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11. The egg apparatus is comparable to,

- A. Female gametangium
- B. Female gametophyte
- C. A reduced archegonium
- D. Both a and c correct

Answer: D



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12. 16-nucleate embryo sac is found in:

A. Peperomia

B. Allium

C. Polygonum

D. Oenothera

Answer: A



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13. At the time of fertilization, the embryo sac shows degeneration of:

A. Synergids and antipodals

B. Polars and antipodals

C. Egg cell and polars

D. None of the above

Answer: A



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14. Typical bisporic embryo sac is :

- A. Allium type embryo sac
- B. Polygonum type embryo sac
- C. Peperomia type embryo sac
- D. Drusa type embryo sac

Answer: A



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15. Secondary nucleus is polypoid in embryo sac like:

A. Polygonum type

B. Allium type

C. Peperomia type

D. All of these

Answer: C



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16. Oenothera type embryo sac is:

A. 7-celled

B. 8-nucleate

C. 4-nucleate

D. 2-celled

Answer: C



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17. The most common type of ovule in angiosperm is:

- A. Orthotropus ovule
- B. Anatropous ovule
- C. Amphitropous ovule
- D. Circinotropous ovules

Answer:



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18. In a mature and fertilized ovule n , $2n$ and $3n$ conditions respectively occur in:

- A. Integument , embryo and endosperm
- B. Embryo, endosperm, synergids
- C. Antipodals, embryo, endosperm
- D. Antipodal, synergids, embryo

Answer: C



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19. A polygonum type embryo sac is:

A. 7-celled or 8-nucleate

B. 8-celled or 7-nucleate

C. 8-celled or 8-nucleate

D. 7-celled or 7-nucleate

Answer: A



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20. When all the four megaspores take part in the development of an embryo sac, it refers to:

- A. Tetrasporic development
- B. Tetrad formation
- C. Multiple embryo sac
- D. none of the above

Answer: A



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21. Antipodals are not found in embryo sac of:

- A. Allium type
- B. Oenothera type
- C. Polygonum type
- D. Peperomia type

Answer: B



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22. Protandry and protogyny help in:

A. Quick fertilization

B. Self fertilization

C. Cross fertilization

D. Delayed fertilization

Answer: C



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23. Which among the following is very common?

A. Porogamy

B. Mesogamy

C. Chalazogamy

D. Zoodiogamy

Answer: A



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24. Fruit formation is directly associated with stimulus of:

A. Pollination

B. Fertilization

C. Endospore formation

D. None of these

Answer: A



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25. Double fertilization is not found in:

A. Gymnosperms

B. Pteridophytes

C. Bryophytes

D. All of these

Answer: D



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26. Chalazogony has been reported in:

A. Casuarina

B. Hibiscus rosa-sinensis

C. *Pisum sativum*

D. *Helianthus annuus*

Answer: A



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27. Double fertilization was discovered by:

A. B.G.I Swamy

B. A.V. Leeuwenhoek

C. S.G. Nawaschin

D. Karl Schnarf

Answer: C



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28. Seeds are product of sexual reproduction as they are produced by:

A. Fusion of gametes

B. Siphonogamy

C. Ovules

D. Embroy sac

Answer: A



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29. Obturator which helps in fertilization is outgrowht o:

A. Pollen tube

B. Placenta

C. Funicle

D. Pollen grains

Answer: B



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30. Pollen tube when enter through integument, it refers to:

A. Apogamy

B. Porogamy

C. Mesogamy

D. Chalazogamy

Answer: C



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31. Triple fusion was discovered by:

A. Leeuwenhoek

B. Amici

C. Nawaschin

D. None of the above

Answer: A



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32. Fusion product of two parts and a male gamete refers to:

- A. Double fertilization
- B. Triple fusion
- C. Primary endosperm
- D. Secondary nucleus

Answer: B



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33. Water is not required for the act of fertilization in:

- A. Cryptogams
- B. Bryophytes
- C. Spermatophytes
- D. Pteridophytes

Answer: C



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34. When pollen tube enters through micropyle, it is called:

- A. Mesogamy
- B. Chalazogamy
- C. Porogamy
- D. Siphonogamy

Answer: C



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35. During fertilization, male gametes are discharged into:

A. Egg cell

B. Central cell

C. Antipodals

D. Degenerated synergids

Answer: D



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36. Male nucleus fuses with female nucleus during fertilization as:

A. They possess two sets of different charges

B. They possess two sets of different genome

C. They are different in size and shape

D. Hormones compel them to fuse

Answer: B



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Embryogenesis

1. Formation of an embryo from synergid or any other haploid cell refers to:

A. Parthenocarpy

B. Parthenogenesis

C. Apogamy

D. Both b and c correct

Answer: D



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2. Early development of embryo in dicots and monocots is similar upto:

A. Daid stage

B. Quadrat stage

C. Globular stage

D. Octant stage

Answer: C



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3. Coconut milk contains:

A. Cytokinins and $3n$ nuclei

B. Auxins and $2n$ nuclei

C. Gibberellins and haploid nuclei

D. Only cytokinins

Answer: A



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4. In the reciprocal crosses, the ploidy level does not change in:

A. Embryo

B. Fruit

C. Endosperms

D. All of them

Answer: A



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5. The embryo of triticum aestivum combines:

A. Three simialr genomes

B. Two similar genomes

C. Three sets of dissimilar genomes

D. Two dissimilar genomes

Answer: C



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6. Scutellum in monocot seed represents the:

A. Cotyledons

B. Radicle

C. Plumule

D. Aril

Answer: A



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7. A trisomic plant has $2n=24$, the number of chromosomes in its endosperm will be:

A. 18

B. 37

C. 20

D. 17

Answer: B



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8. Role of suspensor is:

- A. To push the embryo in nutritive zone
- B. To derive nutrition from embryo
- C. To help in fertilization
- D. To help in maturation of embryo

Answer: A



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Endosperms

1. Endosperms in angiosperms is:

- A. Haustorial
- B. Assimilatory
- C. Protective

D. Nutritive

Answer: D



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2. After fertilization, in the embryo sac which will grow faster?

A. Embryo

B. Endosperm

C. Embryo sac

D. Synergids

Answer: B



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3. If aleurone layer contains 12 chromosomes, the oar wall will contain:

A. 12

B. 18

C. 25

D. 8

Answer: D



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4. Haustoria formation is often seen associated with:

A. Integument

B. Embryo

C. Endosperm

D. Nucellus

Answer: C



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5. If male plant is tetraploid and female plant is diploid, the endosperm will be:

A. $6n$

B. $8n$

C. $12n$

D. 4n

Answer: D



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6. Ruminant endosperm is found in:

A. Palmae

B. Poaceae

C. Asteraceae

D. Leguminosae

Answer: A



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7. Well developed endosperm haustoria is found in:

A. Cucurbits

B. Pea

C. Maize

D. None of these

Answer: A



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8. Pentaploid endosperm is found in:

- A. *Fertillaria*
- B. *Acalypha*
- C. *Peperomia*
- D. *Allium*

Answer: A



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9. Oil is obtained from the endosperm of:

- A. Coconut and Ricins
- B. Arachis and Coconut
- C. Sesamum and Ricins
- D. Brassica and Coconut

Answer: A



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10. In endosperms of cereals, starch grains are found which are:

A. Concentric type

B. Excentric type

C. Fan shaped

D. Water soluble

Answer: A



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11. Mosaic endosperm is best seen in:

A. Coconut

B. Maize

C. Areca nut

D. Ricinus

Answer: B



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12. In maize, aleurone layer develops in outermost region of:

A. Pericarp

B. Epicarp

C. Testa

D. Endosperm

Answer: D



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13. Aleurone layer is rich in:

A. Starch

B. Proteins

C. Lipids and Fats

D. Vitamins

Answer: B



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14. Coconut milk is rich in:

A. Auxins

B. Gibberellins

C. Cytokinins

D. All of these

Answer: C



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15. Young endosperm of maize contains:

A. Cytokinins

B. Kinetins

C. Zeatin

D. Gibberellins

Answer: C



Watch Video Solution

16. The endosperm of coconut is:

A. Free nuclear type

B. Cellular type

C. Helobial type

D. Partially free nuclear partially cellular

Answer: D



Watch Video Solution

17. Milky water of green coconut fruit is its

A. Cell sap

B. Free nuclear endosperm

C. Free nuclear embryonal cells

D. Stored cells

Answer: B



Watch Video Solution

18. Endosperm of angiosperm results from fertilization of:

A. Egg cell with male gamete

B. Poalar with male gamete

C. Secondary nucleus with male gamete

D.

Answer: C



Watch Video Solution

19. Clones are:

A. Only morphologically alike

B. Only genetically alike

C. Morphologically as well as genetically alike

D. Occasionally genetically alike

Answer: C



View Text Solution

Fruits And Seeds

1. Number of meiotic divisions necessary to produce 100 seeds in *Cyperus* is:

A. 100

B. 200

C. 300

D. 125

Answer: B



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2. Dry aril is found in:

A. Litchi

B. Nutmeg

C. Ricinus

D. All of these

Answer: B



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3. Direct effect of pollens on seeds or fruit is referred to:

A. Amphimixis

B. Apomixis

C. Apogamy

D. Xenia

Answer: D



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4. Viviparous germination of seed is characteristics of:

A. *Arachis hypogaea*

B. Coconut

C. Rhizophora

D. Hibiscus

Answer: C



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5. Seedless fruits are produced from:

A. Cleistogamous flowers

B. Unpollinated ovary

C. Unfertilized ovary

D. Fertilized ovary

Answer: C



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6. If a plant BBCC is pollinated by pollens of plant AADD, the fruit thus obtained will have:

A. ABCD genotype

B. AABBCD genotype

C. BBCC genotype

D. AABBCDD genotype

Answer: C



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7. After pollination, ovary wall develops into:

A. Carpel

B. Ovule

C. Fruit

D. Juicy mesocarp

Answer: C



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8. If the ovary is inferior, the outermost layer of fruit produced by this ovary will be formed by:

A. Epicarp

B. Mesocarp

C. Pericarp

D. Thalamus

Answer: D



Watch Video Solution

9. Ploidy level of female plant is the same as that of its:

A. Fruits

B. Seeds

C. Embryo

D. Endosperm

Answer: A



Watch Video Solution

10. A tetraploid apple plant is pollinated by a diploid apple pollen, the fruit thus produced will be:

- A. Diploid
- B. Triploid
- C. Tetraploid
- D. Hexaploid

Answer: C



Watch Video Solution

11. Why the ovules are abortive in seedless banana?

- A. The plant is grown by vegetative means
- B. Flowers remain unpollinated
- C. these are self sterility

D. Plant is triploid thus unable to produce fertile ovules.

Answer: D



Watch Video Solution

12. Albuminous seeds are produced in:

A. Wheat, Maize, Paddy

B. Sugarcane, Barley, Rye

C. Castor, Coconut, Poppy

D. All of these

Answer: D



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13. Supari, which is used with betel is dried and stony.

A. Endocarp

B. cotyledons

C. Endosperms

D. None of these

Answer: C



Watch Video Solution

14. Seeds of Triticum monococcum are:

A. Haploid

B. Diploid

C. Triploid

D. Hexaploid

Answer: B



Watch Video Solution

15. Parthenocarpic fruits are:

- A. Dry and indehiscent
- B. Fleshy and seedless
- C. Multiseeded
- D. Provided with haploid embryo

Answer: B



[Watch Video Solution](#)

16. Seeds are representing:

- A. Fertilized ovule with embryo
- B. A plant body in embryonal stage
- C. A reproductive organ
- D. All of the above

Answer: D



[Watch Video Solution](#)

17. Epigeal germination is found seeds like:

A. Castor

B. Maize

C. Gram

D. Pea

Answer: A



Watch Video Solution

18. In castor seedlings, the first leaf is its:

A. Orchids

B. Cerelas

C. Pulses

D. Lotus

Answer: B



View Text Solution

19. Maximum viability of seeds can be tested by:"

A. Orchids

B. Cereals

C. Pulses

D. Both a) and b)

Answer: D



View Text Solution

20. Viability of seeds can be tested by:

A. Embryo culture

B. TTC test

C. Imbibition test

D. Both a and b

Answer: D



Watch Video Solution

21. If terminator gene is introduced in a plant, its seeds will be:

- A. Devoid of cotyledons
- B. Devoid of fertility embryo
- C. Devoid of reserve food
- D. Without fruits

Answer: B



Watch Video Solution

22. If terminator gene is introduced in a plant, its seeds will be:

- A. Devoid of cotyledons
- B. Devoid of fertility embryo
- C. Devoid of reserve food
- D. Without fruits

Answer: D



Watch Video Solution

23. Seeds show dormancy due to:

A. Formation of impermeable seed coat

B. Formation of dormine

C. Immature embryo

D. All of the above

Answer: D



Watch Video Solution

24. Seeds of rainy seasonal plants do not germinate in winter with seeds of winter seasonal plants due to:

- A. Dormancy in their seeds
- B. Unfavourable environment
- C. Poor moisture in soil
- D. Low temperature

Answer: A



Watch Video Solution

25. Testa is completely fused with pericarp in fruits of:

A. Cereals

B. Pulses

C. Beans

D. All of these

Answer: D



Watch Video Solution

26. In a seed, the radicle is always facing towards:

A. Chalaza

B. Mircopyle

C. Funicle

D. Not certain

Answer: B



Watch Video Solution

27. Which is the method employed for elimination of virus from infected plant?

- A. Shoot apex culture
- B. Root apex culture
- C. Both shoot and root apex cultures.
- D. Using bordeaux mixture.

Answer: A



Watch Video Solution

28. Testa is completely fused with pericarp in fruits of:

A. Cypsela

B. Berry

C. Caryopsis

D. Drupe

Answer: C



Watch Video Solution

29. The point where funicle attaches with ovule is:

A. Chalaza

B. Hilum

C. Micropyle

D. Integument

Answer: B



Watch Video Solution

30. Collar like outgrowths arising from funicle and forming third integument in:

A. Aril

B. Caruncle

C. Funicle

D. Hilum

Answer: A



Watch Video Solution

31. Totipotency was first demonstrated by:

A. Leeuwenhoek

B. Steward

C. Maheshwari

D. Knoll

Answer: B



Watch Video Solution

32. Embryoids are produced by:

A. Syngamy

B. Zygote

C. Explant or callus

D. None of these

Answer: C



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33. Somatic hybrids are produced by fusion of:

- A. Egg cell with male gamete
- B. Synergids with egg cell
- C. Two vegetative cells or protoplasts
- D. Two male gametes

Answer: C



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34. Cybrids are produced by:

A. Interspecific hybridization

B. Somatic hybridization

C. Adventure embryony

D. Apomixis

Answer: B



Watch Video Solution

35. Breeding cycle can be reduced with the help of:

- A. Embryo culture
- B. Protoplasm culture
- C. Cell culture
- D. Micropropagation

Answer: A



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36. Cybrids carry genome of:

A. Both parents

B. Only one parent but cytoplasm of both
parents

C. Both parents but cytoplasm of one
parent

D. None of the above

Answer: B



Watch Video Solution

37. Polyethylene glycol (PEG) is used to prepare the:

- A. Gametes for fusion
- B. Protoplasts for fusion
- C. Nucleus to disintegrate
- D. None of these

Answer: B



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38. Higher auxin: cytokinin ratio in culture medium results in

- A. Rooting in callus
- B. Multishooting in callus
- C. Rapid growth of callus
- D. None of these

Answer: A



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39. Androgenic embryoids are:

A. Haploid

B. Diploid

C. Triploid

D. Polyploid

Answer: A



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40. Rare hybrids can be raised using technique of:

- A. Embryo culture
- B. Ovary culture
- C. Pollen culture
- D. Endosperm culture

Answer: A



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41. Medium required for culture of embryo or ovules is:

A. Simple agar medium

B. Nutrient rich agar

C. Whites or M.S. Media

D. Liquid Broth

Answer: C



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42. Tissue culture technique requires.

A. A specific tissue culture medium rich in nutrients

B. Aseptic conditions

C. Proper aeration

D. All of the above

Answer: D



Watch Video Solution

43. First pollen plant was produced by:

A. Maheshwari and Johri

B. Guha and Maheshwari

C. Johri and Johri

D. Kapil and Johri

Answer: B



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44. Intra-ovarian fertilization (IOF) means fertilization:

A. Outside ovule

B. Outside embryo sac

C. By putting pollens directly into ovary wall

D. Between male gamete and synergids

Answer: C



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45. Tissue culture technique is applied in:

A. Biotechnology

B. Experimental embryology

C. Microporogation and conservation of
germplasm

D. All of the above

Answer: D



Watch Video Solution

46. Agamospermy is formation of seed:

A. Without fertilization

B. Without testa

C. Without embryo

D. None of these

Answer: D



Watch Video Solution

47. Haploid callus can be converted to diploid callus using:

A. Polyethylene glycol

B. Colchicine

C. Cytokinins

D. Auxins

Answer: B



Watch Video Solution

48. Intergeneric hybrids can be obtained with the help of:

- A. Micropropagation
- B. Cryopreservation
- C. Somatic hybridization
- D. Protoplast culture

Answer: C



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49. Source of energy in culture medium is:

A. Auxins and Cytokinnis

B. ATP and GTP

C. Glucose or sucrose

D. Micro- and Macronutrients

Answer: C



Watch Video Solution

50. Culture medium should be sterilized by:

A. Hot air ovens

B. Autoclave

C. Incubator

D. Phytotron

Answer: B



Watch Video Solution

51. Explant should be sterilized by:

A. Stem

B. Direct flame

C. Chlorine water

D. Alcohol or acid

Answer: C



Watch Video Solution

52. Micropropagation technique is quite helpful for:

- A. Orchid cultivation
- B. Rose cultivation
- C. Rare hybrids cultivation
- D. All of these

Answer: C



Watch Video Solution

53. Homozygous plants can be obtained using:

A. Somatic hybridization

B. Pollen culture

C. Embryo culture

D. Ovary culture

Answer: A



View Text Solution

54. TTC is used for:

A. Inducing somatic hybridization

B. Testing seed viability

C. inducing dormancy in seeds

D. Inducing quick germination in dormant
seeds

Answer: B



Watch Video Solution

55. Pollen culture and anther culture have been tried successfully on the membre of:

A. Poaceae

B. Leguminosae

C. Asteraceae

D. Solanaceae

Answer: D



Watch Video Solution

56. Best material for micropropagation is:

A. Pollens

B. Embryo

C. Endosperm

D. Shoot or root tips

Answer: D



Watch Video Solution

57. In paddy and barley, pollens are viable only upto:

- A. 24 hours
- B. One month
- C. Several years
- D. 10-20 minutes only

Answer: A



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58. First case of somatic hybridization was reported by:

A. Carlson

B. Hanning

C. Laibach

D. Maheshwari

Answer: A



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59. In anther culture, the androgenic haploids are obtained from:

A. Young pollen grains

B. Tapetum

C. Jacket cells

D. Connective tissue

Answer: A



View Text Solution

60. Embryoid is produced from:

A. Callus

B. Fertilized egg

C. Fertilized synergids

D. None of these

Answer: A



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61. Parthenocarpy is not desirable in:

A. Litchi

B. Myristica (Nutmeg)

C. Pomegranate

D. All of these

Answer: D



Watch Video Solution

62. In protoplast culture, PEG is used as:

A. Polyploidizing agent

B. Artificial fusion agent

C. Hormone

D. Enzyme

Answer: B



Watch Video Solution

63. Cybrids are used for studying:

A. Cytoplasmic characters

B. Nuclear characters

C. Mutation

D. None of these

Answer: A



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64. Parthenocarpic fruits can be obtained using treatment of:

A. Cytokinins

B. Zeatin

C. Gibberellins

D. X-rays

Answer: C



Watch Video Solution

65. A clone is a group of identical individuals which are obtained by:

A. Self pollination

B. Cross pollination

C. Embryo culture

D. Vegetative propagation

Answer: D



Watch Video Solution

66. Totipotency can be shown by:

A. Sclerenchymatous tissue

B. Scleroite cell

C. Pholem cells or parenchyma

D. All of the above

Answer: C



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67. Paresexual hybridization means

- A. Fusion of male and female nuclei
- B. Fusion of male nucleus with synergid
- C. Fusion of two parts
- D. Fusion of protoplasts

Answer: D



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68. Who is author of book "Introduction to the Embryology" of Angiosperms

A. P. Maheshwari

B. M.S. Swaminathan

C. K.C Mehta

D. R. Mishra

Answer: A



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69. Contrivances for self pollination are

- A. Bixeuality
- B. Homogamy
- C. Cleistogamy
- D. All of these

Answer: D



[Watch Video Solution](#)

70. Wheat grains represent:

- A. Endosperm
- B. Embryo
- C. Single seeded fruit
- D. None of these

Answer: C



[Watch Video Solution](#)

71. When pollens of one plant fall on the stigma of another flower of the same plant, it is known as:

A. Cleistogamy

B. allogamy

C. Autogamy

D. Dichogamy

Answer: B



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72. *Oenothera* type of female gametophyte is always:

- A. 8-nucleate and 7-celled
- B. 16-nucleate and 13-celled
- C. 8-nucleate and 8-celled
- D. 4-nucleate and 4-celled

Answer: D



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73. Growth of pollen tube towards embryo sac is

- A. Geotropism
- B. Thigmotropism
- C. Thermotropism
- D. Chemotropism

Answer: D



Watch Video Solution

74. Cross pollination in crop plant is known as

A. Chalazogamy

B. Cleistogamy

C. Autogamy

D. Allogamy

Answer: D



Watch Video Solution

75. The embryo in sunflower has

- A. Two cotyledons
- B. Only one cotyledon
- C. No cotyledon
- D. Many cotyledons

Answer: A



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76. Anemophilous flowers have:

- A. Sessile stigma

B. small and smooth stigma

C. Long and feathery stigma

D. Coloured flowers

Answer: C



Watch Video Solution

77. Tapetum is :

A. Protective

B. Nutritive

C. Reproductive

D. Gametophytic

Answer: B



Watch Video Solution

78. The filiform apparatus is present in

A. Tapetum

B. Synergids

C. Antipodals

D. Anther wall

Answer: B



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79. Embryo developed from nucellus and integument is known as:

A. Apospory

B. Apogamy

C. Apomixis

D. Adventive embryony

Answer: D



View Text Solution

80. Which of the following is without exception in angiosperms?

A. Presence of vessels

B. Double fertilizations

C. Secondary growth

D. Autotrophic nutrition

Answer: B



Watch Video Solution

81. What is the direction of micropyle in anatropous ovule

A. Upward

B. Downward

C. Right

D. Left

Answer: B



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82. In angiosperms, pollen tube liberates its male gametes into:

A. Central cell

B. Antipodals

C. Egg cells

D. Synergids

Answer: D



Watch Video Solution

83. Polyembryony commonly occurs in

A. Potato

B. Citrus

C. Turmeric

D. Tomato

Answer: B



Watch Video Solution

84. In angiosperm, triple fusion is necessary for the formation of

A. Zygote

B. embryo

C. Endosperm

D. Fruit

Answer: C



Watch Video Solution

85. Root cells of a wheat plant have 42 chromosomes, the number of chromosomes in egg cell will be:

A. 21

B. 42

C. 63

D. 14

Answer: A



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86. In endosperm of maize and *Cycas*, the ploidy level is:

- A. The same
- B. $3n$ in maize and n in *Cycas*
- C. $2n$ in maize and $3n$ in *Cycas*
- D. $3n$ in maize and $5n$ in *Cycas*

Answer: B



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87. When male gametes are carried through a pollen tube, it refers to:

- A. Apogamy
- B. Syngamy
- C. Siphonogamy
- D. Aplanospory

Answer: C



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88. In fossil deposits, pollens are seen well preserved due to presence of:

- A. Lignin in their spore coat
- B. Sporopollenin in their exine
- C. Sporopollenin in their intine
- D. Presence of fats in pollens

Answer: B



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89. Polyembryony was discovered in:

A. Citrus

B. Potato

C. Datura

D. Tobacco

Answer: A



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90. The process of fusion between male nucleus and egg nucleus is called as

- A. Triple fusion
- B. Syngamy
- C. Double fertilization
- D. Apogamy

Answer: B



91. Find out the odd:

A. Micropyle

B. Embryo sac

C. Nucellus

D. Tapetum

Answer: D



92. The pollen tube usually enters the embryo sac:

- A. Through one of the synergids
- B. By direct penetrating the egg
- C. Between one synergid and central cell
- D. By knocking antipodal

Answer: A



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93. Milky water of green coconut fruit is its

- A. Liquid gametess
- B. Liquid nucellus
- C. Liquid female gametophyte
- D. Liquid endosperm

Answer: D



Watch Video Solution

94. Part of the gynoecium which receives the pollen is called

A. Stigma

B. Style

C. Ovary

D. Ovule

Answer: A



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95. Bisexual flowers which never open, demonstrate

A. Autogamy

B. Allogamy

C. Cleistogamy

D. None of these

Answer: C



Watch Video Solution

96. Double fertilization is a characteristic of

- A. Bryophytes
- B. Pteridophytes
- C. Gymnosperms
- D. Angiosperms

Answer: D



Watch Video Solution

97. Emascualtion is only achieved by:

A. Removal of stigma

B. Removal of sepals and petals

C. Removal of anthers

D. Removal of gynoecium

Answer: C



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98. Pollen tube when enter through integument, it refers to:

- A. Mesogamy
- B. Porogamy
- C. Chalazogamy
- D. Pseudogamy

Answer: A



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99. When a diploid female plant is crossed with a tetraploid male, the ploidy level of endosperm cells in the resulting seed is:

- A. Tetraploid
- B. Pentaploid
- C. Diploid
- D. Triploid

Answer: A



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100. Pollen grains are formed in

A. Anther

B. Stigma

C. Filament

D. Pollen sac

Answer: D



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101. For self pollination flower must be:

A. Unisexual

B. Bisexual

C. Monosexual

D. Asexual

Answer: B



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102. In the fully organized Polygonum type of embryo sac, what is the ratio of haploid, diploid and triploid nuclei?

A. 3:1:3

B. 6:0:1

C. 6:1:0

D. 3:2:3

Answer: C



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103. What type of cell division takes place in the functional megaspore initially in angiosperms?

A. Homeotypic without cytokinesis

B. Reductional without cytokinesis

C. somatic followed by cytokinesis

D. Meiotic followed by cytokinesis

Answer: A



Watch Video Solution

104. Coffee plant has chromosome number of $2n$ in its somatic cells. What is the

chromosome number in the edible part of coffee seed?

A. n

B. $2n$

C. $3n$

D. $4n$

Answer: B



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105. Aleurone layer is part of:

A. Endosperm

B. Embryo

C. Tegmen

D. Testa

Answer: A



Watch Video Solution

106. Which of these is not essential for allogamy?

- A. Self sterility
- B. Dichogamy
- C. Heterogamy
- D. None of these

Answer: D



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107. Fibrous thickenings of hygroscopic nature are found in which part of anther walls?

- A. Epidermis
- B. Endothecium
- C. Middle layer
- D. Tapetum

Answer: B



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108. which of the following statements is true with reference to cross pollination in angiosperms?

A. It requires the production of a large number of pollen grains

B. It can fail to occur due to distance barrier

C. It occurs only in unisexual flowers

D. It most often results in high yield of plants.

Answer: A



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109. In turnip, $\frac{2}{3}$ part of swollen area is derived from:

A. Hypophysis

B. Hypocotyl

C. Epicotyl

D. Radicle

Answer: B



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110. Which of the following is not functionally analogous with other in the group

A. Antheridium

B. Archegonium

C. Oogonium

D. Ovule

Answer: D



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111. Most resistant biological material is:

A. Lignin

B. Cellulose

C. Suberin

D. Sporopollenin

Answer: D



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112. The triploid number of chromosomes of the first taxon is 10 times more than the haploid number of chromosomes of the second taxon, while the diploid number of the third taxon is 6 times more than the haploid number of the fourth taxon. Which one of the following shows the ascending order of the number of chromosomes in their respective endosperm?

A. Oryza-Allium-Saccharum-Nicotiana

B. Allium-Oryza-Nicotiana-Saccharum

C. Nicotiana-Saccharum-Oryza-Allium

D. Saccharum-Oryza-Nicotiana-Allium

Answer: B



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113. The seeds which have no separate endosperm:

A. Maize

B. Onion

C. Rice

D. Bean

Answer: D



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114. Number of pollen grains produced by head inflorescence of Asteraceae (Compositae)

having 10 flowers, if each anther produces 20 pollen grains are:

A. 300

B. 500

C. 800

D. 1000

Answer: D



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115. Pollination by insect is called:

A. Zoophily

B. Chiropterophily

C. Anemophily

D. Entomophily

Answer: D



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116. Male gamete in angiosperm is produced by:

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

Answer: A



Watch Video Solution

117. Double fertilization is fusion of:

A. Two eggs

B. Two eggs and polar nuclei

C. One male gamete with egg and other
with synergids

D. One male gamete with egg and other
with secondary nucleus

Answer: D



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118. Seed develop from

A. Embryo

B. Embryo sac

C. Ovary wall

D. Ovules

Answer: D



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119. The plant part which consists of two generations one within the other is

A. Germinated pollen grains

B. Embryo

C. Unfertilized ovule

D. Seedling stage

Answer: C



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120. Apogamy is :

- A. Reproduction of viruses
- B. Failure of fusion of gametes
- C. Development of bacteria
- D. Loss of function of reproduction

Answer: B



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121. The process in which haploid embryo is formed from haploid egg without fertilization is called :

A. Apospory

B. Agamospermy

C. Apogamy

D. Vegetative propogation

Answer: C



Watch Video Solution

122. Growth of pollen tube towards embryo sac is

- A. Geotropism
- B. Thigmotropism
- C. Chemotropism
- D. All of these

Answer: C



Watch Video Solution

123. When pollen tube enters through micropyle, it is called:

A. Porogamy

B. Mesogamy

C. Anisogamy

D. Chalazogamy

Answer: A



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124. The formation of embryo without fusion of gametes is termed as

A. Apogamy

B. Apospory

C. Parthenocarpy

D. Polyembryony

Answer: A



Watch Video Solution

125. The hormone present in liquid endosperm is:

A. Cytokinin

B. Gibberellins

C. Ethylene

D. Auxin

Answer: A



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126. The ovary after fertilization is converted into

A. Embryo

B. Endosperm

C. Fruit

D. Seed

Answer: C



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127. Anthesis is a phenomenon which refers to:

- A. Reception of pollen by stigma
- B. Formation of pollen
- C. Development of anther
- D. Opening of flower bud

Answer: D



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128. Study of pollen grains is called:

A. Etymology

B. Palynology

C. Paleobotany

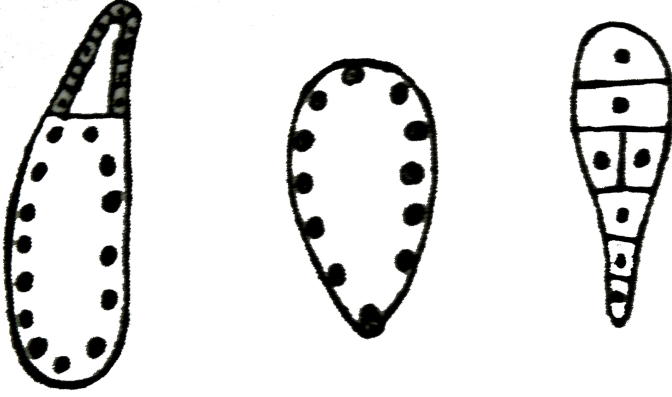
D. Taxonomy

Answer: B



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129. 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, helobial, cellular

Answer: C



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130. 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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131. Cellular totipotency is demonstrated by

- A. Only gymnospermous cells
- B. All living plant cells
- C. all eukaryotic cells
- D. only bacterial cells

Answer: B



Watch Video Solution

132. A typical angiosperm embryo sac at maturity is 8-nucleate and:

A. Single celled

B. Four celled

C. Seven celled

D. Eight celled

Answer: C



Watch Video Solution

133. 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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134. Endosperm may completely be consumed by the developing embryo before seed maturation in:

A. Pea

B. Groundnut

C. Pea and groundnut

D. Castor, pea and groundnut

Answer: C



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135. Formation of liquid endosperm in coconut takes place because:

- A. Karyokinesis is not followed by cytokinesis
- B. Karyokinesis is followed by cytokinesis
- C. Formation of liquid endosperm is not dependent upon karyokinesis and cytokinesis
- D. None of the above

Answer: A



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136. Sporopollenin is chemically:

- A. Homopolysaccharide
- B. Fatty substance
- C. Proteins
- D. Heteropolysaccharides

Answer: B



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137. One advantage of cleistogamy is

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

Answer: C



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138. In a monoecious plant

A. Male and female sex organs are on different individuals

B. Male and female gametes are of morphologically distinct type

C. Males and female sex organs on the same individual

D. All the stamens are fused to form one unit

Answer: C



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139. Milky water of green coconut fruit is its

A. Liquid endosperm

B. Seed

C. Mesocarp

D. Endocarp

Answer: A



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140. Embryo axis above the cotyledon is called as

A. Epicotyl

B. Hypocotyl

C. Funicle

D. Raphe

Answer: A



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141. Micropyle of seed facilitates in the entry of:

A. Air

B. Water

C. Pollens

D. CO_2

Answer: B



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142. The hilum and micropyle lie side by side very close to each other in

A. Anatropous ovules

B. Campylotropous ovules

C. Amphitropous ovule

D. Circinotropous ovules

Answer: A



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143. Tapetum is found in:

A. Anthers

B. Androecium

C. Ovary

D. Ovules

Answer: A



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144. Female gametophyte of angiosperm is called:

A. Ovules

B. Gynoecium

C. Seed

D. Embryo sac

Answer: D



Watch Video Solution

145. When the anthers mature earlier than the stigma of ones own flower, the condition is known as

A. Dicliny

B. Hetrostyly

C. Protandry

D. Protogyny

Answer: C



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146. A 'clone' is a group of individual obtained through:

A. Self-pollination

B. Hybridization

C. Vegetative propagation

D. Cross pollination

Answer: C



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147. Banana fruit are seedless because they:

A. are triploid

B. have plenty of auxins

C. reproduce asexually

D. none of these

Answer: A



View Text Solution

148. Transfer of pollen grains from the another to the stigma of another flower of the same plant is called

A. Xenogamy

B. Geitonogamy

C. Autogamy

D. Allogamy

Answer: B



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149. Select the incorrect statement regarding angiosperm

A. Megaspore is diploid

B. Megaspore is the first cell of female gametophyte

C. The pollen grain is the first cell of male gametophyte

D. All of the above

Answer: A



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150. In hypogeal germination due to elongation of ...plumule comes out of the ground

Or

The portion of embryonal axis above cotyledon is called as

A. Hypocotyl

B. Epicotyl

C. Cotyledons

D. Both a and b

Answer: B



Watch Video Solution

151. Apomictic embryos in Citrus arise from:

- A. Synergids
- B. Maternal sporophytic tissue in ovule
- C. Antipodals
- D. Diploid egg

Answer: B



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152. The egg apparatus of angiosperms comprises

- A. An egg cell and two synergids
- B. An egg cell and two antipodals
- C. An egg cell and two polars
- D. An egg cell and a central cell

Answer: A



153. Nucellar polyembryony is reported in species of:

A. Brassica

B. Citrus

C. Gossypium

D. Triticum

Answer: B



View Text Solution

154. The filiform apparatus is present in

A. Zygote

B. Suspensor

C. Egg cell

D. Synergids

Answer: D



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155. What would be the number of chromosomes of the aleurone cells of a plant with 42 chromosomes in its root tip cells?

A. 21

B. 42

C. 63

D. 84

Answer: C



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156. Study the following statements and select the correct option.

(i) Tapetum nourishes the developing pollen grains.

(ii) Hilum represents the junction between ovule and funicle.

(iii) In aquatic plants such as water hyacinth and waterlily, pollination occurs by water.

(iv) The primary endosperm nucleus is triploid.

A. A and B are correct

B. A, B and D are correct

C. B, C and D are correct

D. Only A and D are correct

Answer: C



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157. Ovule is attached to placenta of ovary wall

by:

A. Funicle

B. Hilum

C. Raphe

D. Chalaza

Answer: A



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158. When pollen tube enters through micropyle, it is called:

A. Mesogamy

B. Porogamy

C. Calazomgamy

D. Autogamy

Answer: B



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159. Most resistance biological material is

Or

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

A. Lignin

B. Cellulose

C. Cuticle

D. Spropollenin

Answer: D



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160. Both, autogamy and geitonogamy are prevented in

A. Castor

B. Maize

C. Papaya

D. Cucumber

Answer: C



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161. What is the function of germ pore

A. Release of male gametes

B. Emergence of radicle

C. Absorption of water for seed
germination

D. Initiation of pollen tube

Answer: D



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

A. Wind

B. Bees

C. Butterflies

D. Birds

Answer: A



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163. Which one of the following statements is wrong?

- A. Intine is made up of cellulose and pectin
- B. When pollen is shed at 2-celled state, double fertilization does not take place.
- C. Pollen grains in some plants remain viable for a month
- D. Vegetative cell is larger than generative cell

Answer: B



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164. Which one of the following may require pollinators but is generatically similar to autogamy

A. Geitonogamy

B. Xenogamy

C. Apogamy

D. Cleistogamy

Answer: A



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165. Transmission tissue is characteristic feature of

A. Hollow style

B. Solid style

C. Dry stigma

D. Wet stigma

Answer: B



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166. Which one of the following statements is not true

A. Pollen grains are rich in nutrients and they are used in the form of tablets and syrups

B. Pollen grains of same plants cause severe allergies and bronchial affections in some people

C. The flowers pollinated by flies and bats secrete foul odour to attract them

D. Honey is made by bees by digesting pollen collected from flowers.

Answer: D



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167. Which of the following are the important floral rewards to the animal pollinators

A. Colour and large size of flower

B. Nectar and pollen grains

C. Floral fragrance and calcium crystals

D. Protein pellicle and stigmatic exudates

Answer: B



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168. Male gametophyte in angiosperms produces:

A. Single sperm and a vegetative cell

B. Single sperm and two vegetative cells

C. Three sperms

D. Two sperms and a vegetative cell

Answer: D



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169. Coconut water from a tender coconut is:

A. Free nuclear endosperm

B. Innermost layers of the seed coat

C. Degenerated nucellus

D. Immature embryo

Answer: A



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

A. Coleorrhiza

B. Scutellum

C. Coleoptile

D. Epiblast

Answer: B



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

A. Tapetum helps in the dehiscence of anther

B. Exine of pollen grains is made up of sporopollenin

C. Pollen grains of many species cause severe allergies

D. Stored pollen in liquid nitrogen can be used in the crop breeding programmes

Answer: A



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

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

Answer: D



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173. Which one of the following generates new genetic combinations leading to variations?

A. Vegetative reproductions

B. Parthenogenesis

C. Sexual reproduction

D. Nucellar polyembryony

Answer: C



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174. In majority of angiosperms:

A. Egg has a filiform apparatus

B. There are numerous antipodal cells

C. Reduction division occurs in the
megaspore mother cells

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

Answer: C



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175. 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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176. 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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177. Which of the following statements is not correct?

A. Pollen grains of many species can germinate on the stigma of a flower but only the pollen tube of the same species grows into the style.

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

C. Pollen germination and pollen tube growth are regulated by chemical components of pollen interacting with those of the pistil

D. Some reptiles have also been reported as pollinators in some plant species.

Answer: A



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Apomixis Parthenogenesis Polyembryony

1. Apogamy results in formation of:

- A. Diploid sporohyte
- B. Diploid gametophyte
- C. Haploid sporophyte
- D. None of these

Answer: C



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2. Apospory and apogamy are collectively called:

A. Amphimixis

B. Apomixis

C. Syngamy

D. Adventive embryony

Answer: B



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3. Apomixis does not involve in:

- A. Fruit formation
- B. Nuclear fusion
- C. Parthenogenesis
- D. None of these

Answer: B



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4. Parthenogenesis means development of plant:

A. From fusion of gametes

B. From vegetative means

C. from unfertilized egg

D. From endosperms

Answer: C



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5. Development of embryo parthenogenetically from gamete without fertilization refers to:

- A. Amphimixis
- B. Apogamy
- C. Apospory
- D. Embryogenesis

Answer: B



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6. Pomato is produced as first man made vegetable by:

A. Interspecific hybridization

B. Intergeneric hybridization

C. Somatic hybridization

D. Cybridization

Answer: B::C



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7. Term apomixis was given by:

A. Leeuwenhoek

B. Winkler

C. Maheshwari

D. None of these

Answer: A



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8. Adventive embryony and polyembryony is common in:

A. Triticum

B. Citrus

C. Carthamus

D. Corchorus

Answer: B



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9. In angiosperm, polyembryony was first reported by:

A. Amici in Portulaca

B. Leeuwenhoek in Citrus

C. Maheshwari in Citrus

D. Nawaschin in Oranges

Answer: B



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1. Development of plant from root or shoot cutting through tissue culture refers to:

- A. Adventive embryony
- B. Apomixis
- C. Apospory
- D. Micropropogation

Answer: D





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2. Clones can be obtained through:

A. Apogamy

B. Apospory

C. Apomixis

D. Micropropagation

Answer: D



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3. Which one of the following are not diploid?

A. Root and shoot tips

B. Nucellus and integuments

C. Secondary nucleus and zygote

D. Pollens and egg cell

Answer: D



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4. Cellular totipotency was first demonstrated in:

A. Pollens

B. Pholem of carrot roots

C. Leaves of Nicotiana

D. Tomato fruits

Answer: D



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5. Growing plants from the root or shoot tips, in vitro, refers to:

- A. Cell culture
- B. Tissue culture
- C. Organ culture
- D. Protoplast culture

Answer: B



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6. Proplast of two cells repel each other because of carrying:

- A. Opposite charges
- B. Similar charges
- C. Certain chemical inhibitors
- D. Certain hormones

Answer: B



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7. Cybrids carry:

A. Two similar genomes

B. Only one genome

C. Several genome

D. One genomes and two plasmon

Answer: D



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8. Somaclonal variations are seen in plants raised through:

A. Tissue culture

B. Pollen culture

C. Embryo culture

D. None of these

Answer: A



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9. In anther culture, the androgenic haploids are produced from:

A. Tapetum

B. Endothecium

C. Microspore mother cell

D. Microspores

Answer: D



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10. Chromosomal doubling is caused in callus by using:

A. Cytokinis

B. Auxin: Cytokinins 1:1

C. Auxin : Cytokinins 10:1

D. Colchicine

Answer: D



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11. Homozygous diploid can easily be produced using:

- A. Ovary culture
- B. Tissue culture
- C. Protoplast culture
- D. Pollen culture

Answer: D



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12. The reproduction is only by vegetative means if the plant is:

A. Developed parthenogenetically

B. Produced by pollen culture

C. Produced by apogamy

D. All of the above

Answer: D



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13. Nurse tissue technique is applied in:

A. Pollen culture

B. Embryo culture

C. Ovule culture

D. Ovary culture

Answer: A



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14. Ovary culture reveals the physiochemical changes occurring during the formation of:

A. Seeds

B. Embryo from zygote

C. Endosperms in embryo sac

D. Fruit

Answer: D



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15. Endosperm transplant technique is applied in culture of:

A. Ovary

B. Embryo

C. Ovule

D. None of these

Answer: B



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16. Rare and intergeneric hybrid embryo grows well:

- A. Inside ovule of mother plant
- B. In suitable nutrient rich culture medium
- C.
- D. Outside the seed coat

Answer: B



View Text Solution

17. Growth of cellus in tissue can be accelerated using:

A. Gibberellins

B. Cytokinins or cocount milk

C. Cucumber extract

D. Auxins

Answer: B



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Questions From Competitive Examinations

1. If basal cells of 2-celled proembryo divides transversely the embryogeny would be:

- A. Solanad and asterad type
- B. Chenopodiad and onagrad type
- C. Caryophyllad and onagrad type
- D. Solanad and chenopodiad type

Answer: D



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2. If basal of 2-celled proembryo divides longitudinally and the basal and terminal cells both contribute to the development of embryo, this type of embryogeny would be called as:

A. Onagrad type

B. Asterad type

C. Solanad type

D. Both a and b)

Answer: B



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3. What would be the chromosome number of endosperm if it is developed from *Oenothera* type of embryo sac possessing chromosome number equal to 16(haploid)?

A. 32 (Diploid)

B. 48 (Triploid)

C. 16 (Haploid)

D. None of these

Answer: A



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4. Which one of the following is the most common type of embryo sac?

A. allium type

B. Oenothera type

C. Polygonum type

D. Adoxa type

Answer: C



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5. In order to check the purity of honey and its source, pollen grains are being studied in a sample of honey such a study is called as:

A. Aeropalynolgy

B. Palynology

C. Melittopalynology

D. Latropalynology

Answer: C



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6. In an angiosperm, how many microspore mother cells are required to produce 100 pollen grains?

A. 25

B. 50

C. 75

D. 100

Answer: A



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7. Which of the following will lose its economic value, if its fruits are produced by induced parthenocarpy?

A. Grape

B. Banana

C. Orange

D. Pomegranate

Answer: D



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8. The role of double fertilization is to produce:

A. Integuments

B. Endocarp

C. Endosperm

D. Cotyledons

Answer: D



Watch Video Solution

9. The role of double fertilization is to produce:

A. Integuments

B. Endocarp

C. Endosperm

D. Cotyledons

Answer: C



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10. Marigold has:

A. One cotyledon

B. No cotyledon

C. Two cotyledon

D. Many cotyledons

Answer: C



Watch Video Solution

11. In angiosperms endosperm is formed by

A. Division of fused polar nuclei

B. Free nuclear divisions of megaspore

C. Division of fused synergids and male gamete

D. Division of fused polar nuclei and male gamete

Answer: D



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12. In an embryo sac of a typical angiosperm there are

- A. Egg cell, synergids and antipodals
- B. Egg cell, synergids and secondary nucleus
- C. Egg cell, synergids, central cell and polar nuclei
- D. Egg cell, synergids, polar nuclei and antipodals

Answer: D



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13. To get haploid callus, one can culture:

A. Embryo

B. Leaf tissue

C. Stigma

D. Pollens

Answer: D



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14. Allium type bisporic type female gametophyte is always:

- A. 8-nucleate and 7-celled
- B. 16-nucleate and 13-celled
- C. 8-nucleate and 8-celled
- D. 4-nucleate and 4-celled

Answer: A



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15. In angiosperm, female gametophyte is represented by:

- A. Embryo sac
- B. Carpel
- C. Style
- D. Pollen grains

Answer: A



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16. Which of the following is formed as a result of double fertilization?

A. Endosperm

B. Megaspore

C. Seed

D. Fruit

Answer: A



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17. Tapetum is a part of

- A. Male gametophyte
- B. Female gametophyte
- C. Ovary wall
- D. Anther wall

Answer: A



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18. Stalk of the ovule is called:

A. Peduncle

B. Petiole

C. Pedicel

D. Funicle

Answer: D



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19. When the body of the ovule, embryo sac, micropyle and funicile, all lie in one vertical plane, the ovule is said to be:

A. Orthotropus

B. Campylotropous

C. Anatropous

D. Amphitropous

Answer: A



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20. Eight nucleate embryo sac may be produced by embryo sac of:

A. Monosporic type

B. Bisporic type

C. Tetrasporic type

D. All of these

Answer: D



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21. Point of attachment of ovule to the funicile is known as:

A. Chalaza

B. Micropyle

C. Raphae

D. Hilum

Answer: D



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22. Through which route the pollen tube enters the ovule

A. Chalaza

B. Micropyle

C. Funicile

D. any of these

Answer: B



Watch Video Solution

23. Milky water of green cocounut is:

A. Liquid endosperm

B. Liquid gametophyte

C. Liquid nucellus

D. Liquid chalaza

Answer: A



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24. Pollen kit substances is supplied by:

A. Tapetum

B. Microspore mother cells

C. Endosperms in embryo sac

D. Middle layer

Answer: A



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25. In angiosperm, triple fusion results in formation of:

A. Secondary nucleus

B. Primary endosperms nucleus

C. Polars

D. Zygote

Answer: B



Watch Video Solution

26. What is the benefit from pollen culture?

A. Production of hybrids

B. Rare plant species can be preserved

C. Haploid plants can be produced

D. None of the above

Answer: C



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27. Embryo sac of an angiosperm is:

A. Female gamete

B. Female gametophyte

C. Male sporophyte

D. Female sporophyte

Answer: B



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Ncert Corner

1. To a biologist, flowers are:

- A. Morphological marvels
- B. Embryological marvels
- C. Both a and b

D. None of these

Answer: C



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2. A typical angiosperm anther is:

A. Bilobed and dithecous

B. Bilobed and monothealous

C. Unilobed and dithecous

D. Unilobed and monothealous

Answer: A



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3. The anther is a four-sided structure consisting of:

- A. One microsporangium
- B. Two microsporangia
- C. Three microsporangia
- D. Four microsporangia

Answer: D



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4. The microsporangia develop further and become:

A. Megasporangia

B. Pollen sacs

C. Tapetum

D. Sporogenous tissue

Answer: B



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5. The pollen grains represents the:

- A. Male gametophyte
- B. Female gametophyte
- C. Embryo sac
- D. None of these

Answer: A



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6. The hard outer layer of pollen grains called exine is made up of:

- A. Cellulose
- B. Pectose
- C. Sporopollenin
- D. Chitin

Answer: C



7. Prollen grains are well preserved as fossils because of the presence of:

- A. Cellulose
- B. Pectin
- C. Chitin
- D. Sporopollenin

Answer: D



8. Which of the following has been claimed to increase the performance of athletes and race horses?

A. Pollens

B. Honey

C. Embryos

D. Styles and stigmas

Answer: A



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9. Pollen grains lose viability within 30 minutes of their release in:

- A. some legumes like pea and gram
- B. Some cereals like rice and wheat
- C. Members of Rosaceae
- D. Members of Solanaceae

Answer: B



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10. Arising from the placenta are the megasporangia, commonly called:

A. Anthers

B. Ovules

C. funicle

D. Nucellus

Answer: B



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11. Opposite the micropylar end, representing the basal part of the ovule is called:

A. Funicle

B. Chalaza

C. Micropyle

D. Hilum

Answer: B



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12. In embryo sac, three cells are grouped together at the micropylar end and constitute.

- A. Antipodals
- B. Central cell
- C. Egg apparatus
- D. Synergids

Answer: C



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13. The only type of pollination which during pollination brings genetically different types of pollen grains to the stigma, is:

A. Geitonogamy

B. Xenogamy

C. Autogamy

D. Chasmogamy

Answer: B



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14. Hair present on the cob of corn are

Or

Long filamentous threads protruding at the end of young cob of maize are

A. Stigmas

B. Styles

C. Stigma and styles

D. None of these

Answer: C



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15. The condition which prevents both autogamy and geitongamy is:

- A. Monoecy
- B. Dioecy
- C. Cleistogamy
- D. None of these

Answer: B



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16. Floral rewards providing safe places to lay eggs occur in:

A. Amorphophallus

B. Yucca

C. Both a and b

D. None of these

Answer: C



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17. The central cell of embryo sac after triple fusion becomes:

A. Primary Endosperm Cell (PEC)

B. Embryo

C. Zygote

D. Scutellum

Answer: A



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18. The tissue in which cells are filled with reserve food materials and are used for nutrition of the developing embryo, is:

- A. Epicotyl
- B. Hypocotyl
- C. Endosperm
- D. Perisperm

Answer: C



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19. The mature embryo in angiosperms is:

- A. Globular and heart-shaped
- B. Globular and kidney-shaped
- C. Polygonal and heart-shaped
- D. None of the above

Answer: A



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20. In grass family, the cotyledon is called:

A. Plumule

B. Hypocotyl

C. Scutellum

D. Radicle

Answer: C



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21. The residual, persistent nucellus is called:

A. Endosperm

B. Perisperm

C. Aril

D. Pericarp

Answer: B



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22. The wall of the ovary develops into:

A. Integument

B. Testa

C. Tegmen

D. Pericarp

Answer: D



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23. A few flowering plants such as some species of Asteraceae and grasses have evolved a special mechanism to produce seeds without fertilization is called:

A. Apomixis

B. Parthenocarpy

C. Amphimixis

D. Embryogeny

Answer: A



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