BIOLOGY

BOOKS - TRUEMAN BIOLOGY

SEXUAL REPRODUCTION IN FLOWERING PLANTS

Multiple Choice Questions

1. Anthesis is a phenomenon which refers to

A. formation of pollen

B. development of anther

C. opening of flower bud

D. reception of pollen by stigma

Answer: C

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2. Amphimixis is

A. reaction of antification and fretilizin

B. fusion of male and female pronuclei

C. formation of reception cone by ovum

D. pentration of sprm into ovum

Answer: B

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3. A T.S. of dithecous anther shows

A. endothecium inner to middle layers

B. tapetum just below endothecium

C. middle layers between endothecium and tapetum

D. tapetum below epidermis

Answer: C

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4. Stamen represents

A. pollen grains

B. palmas

C. flowers

D. fruits

Answer: A

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5. The nutritive layer of pollen sac/microsporangium is

A. gametangium

B. endothecium

C. tapetum

D. sporangium

Answer: C

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6. Ubisch bodies are connected with the development of

A. sporogenous tissue

B. tapetum just below endothecium

C. endothecium

D. exothecium

Answer: B

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7. Ubisch bodies are connected with the development of

A. exine of pollen grain

B. endothecium

C. pollen tube

D. all of these

Answer: A

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8. Ubich granules are secreted

A. pollen grains

B. tapetum cels

C. Ovules

D. insect legs

Answer: B

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9. In angiosperms, all the four microspores of a tetrad are covered by a layer formed by

A. cellulose

B. sporopollenin

C. pectose

D. callose

Answer: D

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10. Pollen grain is related to embryo sac as

A. sperm to egg

B. male gametophyte to female gameto-phyte

C. male gametophyte to eff

D. sperm to female gametophyte

Answer: B

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11. A typical anther of an angiosperm is

A. monothecous, bisporangiate

B. monothecous, tetrasporangiate

C. dithecous, bisporangiate

D. dithecous, tetrasporangiate

Answer: D

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12. Endothecium layer present below epidermis in anther bears fibrous thickings and helps in

A. dehiscenece of anthers

B. nutrition of spores

C. formation of sporopollenin

D. absorption of water

Answer: A

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13. The number of pollen grains, produced by each head inflorescene of family Asteraceae having 10 actinomorphic

flowers (if each anther produces 20 pollen grains), are

A. 300

B. 500

C. 800

D. 1000

Answer: D

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14. Pollen sac correponds to which part

A. microsporangium

B. gametophyte

C. megasporangium

D. microspore

Answer: A

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15. Pollen tube is made up of

A. cutin

B. sporopollenin

C. pectocellulose

D. pectin

Answer: C

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16. The intine of a pollen grain is mainly made up of

A. cellulose and pectin

B. lipid and pectin

C. pectin and lignin

D. lignin and cutin

Answer: A

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17. In angiosperm polle grains are dehisced at

A. 4 celled stage

B. mostly at 2 and sometimes at 3 called stage

C. 3 called stage

D. pollen tube stage

Answer: B

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18. In dicots, at how many places exine is absent in the pollen grain ?

A. 2

B. 3

C. 1

D. more than 3

Answer: B

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19. Which one is larger nucleus in pollen grain ?

A. generative nucleus

B. vegetative nucleus

C. male gamete nucleus

D. prothallial nucleus

Answer: B

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20. The exine of a pollen grain is composed of one of the most resistant biological matieral by which pollen grains are able to withstand extremes of temperature and dessication and cannot be degraded by any enzyme is

A. lignocellulose

B. sporopollenin

C. cellulose and lignin

D. pectin and cellulose

Answer: B

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21. Genotypically the pollen grain proudcedin side the anther belong to

A. one type

B. two types

C. many types

D. all the above

Answer: C

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22. Germ pore is the area where exine is

A. absent

B. thick

C. thick & uniform

D. uniform

Answer: A

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23. A plant root has 16 chromosomes , so

A. gamate has 16 chromosomes

B. gamete has 8 chromosomes

C. endosperm has 8 chromosomes

D. endosperm has 16 chromosomes

Answer: B

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24. Sculpturing of exine of pollen is important in

A. mitotic studies

B. physiologicl studies

C. taxonomic studies

D. medicinal studies

Answer: C

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25. Ovule is technically equivalent to

A. megasporangium with one megaspore

B. integumated indehiscent megasporangium

C. megagametangium

D. integumented female gameteophyte

Answer: B

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26. Ovule is attached to the placenta by a stalk known as

A. funicle

B. petiole

C. pedicel

D. hilum

Answer: A

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27. Collar like outgrowth arising from the base of ovule and forming is a sort of third integument is known as

A. caruncle

B. aril

C. coma

D. operculum

Answer: B

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28. In tenuinucellate type of ovule

A. nucellus is small

B. nucellus is large

C. nucellus does not develop

D. ovule is vestigeal

Answer: A

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29. Crassinucellate ovule shows:

A. Developed nucellus

B. Partically development nucellus

C. Well developed nucellus

D. No nucellus

Answer: C

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30. When ovule is straight with funiculus, embryo sac, chalaza and micropyle lying iin a straight vertical line, it is known as

A. orthotropous

B. anatropous

C. campylotropous

D. amphitropous

Answer: A

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31. Internal fertilisation occurs

A. In female body

B. Outside female body

C. In male body

D. Outside male body

Answer: C

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32. Ovule of Opuntia is coiled and turn at more kthan 360° angle, is called

A. circinotropous

B. anatropous

C. amphitropous

D. non of these

Answer: A

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33. Female gametophyte (megagametophyte of aniosperms) is represented by

A. ovule

B. embryo sac

C. megaspore mother cell

D. megasporophyll

Answer: B

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34. The female gametophyte of a typical dicot (Polygonum) at the time of fertilization is

A. 8 -celled

B. 7-celled

C. 4-celled

D. 6-celled

Answer: A

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35. Number of chromosomes is 24 in nucellus. Number of chromosomes in microspore mother cell would be

A. 36

B. 24

C. 30

D. 12

Answer: B

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36. Base of nucellus from which integument arises is

A. hilum

B. funicle

C. chalaza

D. micropyle

Answer: C

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37. The megasporangium of the angiosperms on maturation gives rise to

A. fruit

B. seeds

C. embryo

D. cotyledons

Answer: B

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38. Megasporophyll of Pinus is equivalent to angiospermic

A. carpel

B. ovule

C. pedicel

D. placentra

Answer: A

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39. What do you think is the correct sequence of the development of the embryo sac ?

A. Archesporium $\rightarrow$ megaspore mother cell $\rightarrow$ megaspore $\rightarrow$ embryo sac

B. Archesporium $\rightarrow$ measpore $\rightarrow$ megaspore mother cell $\rightarrow$ embryo sac

C. Arcehsporium $\rightarrow$ megasporangium $\rightarrow$ embryo sac $\rightarrow$ embryo

D. Archesporium $\rightarrow$ nucellus $\rightarrow$ embryo sac $\rightarrow$ megaspore

Answer: A

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40. Embryo sac develops from megaspore mother cell through

A. two meiotic and two mitosis divisions

B. one meiotic and three mitosis divisions

C. two meitotic divisions

D. one meiosis and two mitotic divisions

Answer: B

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

A. germinated pollen grains

B. seed

C. embryo

D. unfertilized ovule

Answer: D

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42. Function of guiding and attracting pollen tube towards egg is done by

A. egg cell

B. filiform apparatus

C. anitpodal cell

D. polar nuclei

Answer: B

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43. In flowering plants archesporium gives rise to

A. wall and the tapetum

B. only tapetum and sporogenous cells

C. only the wall of the sporangium

D. both wall and the sporogenous cells

Answer: D

44. The number of chromosomes in leaf tip cell of plant is 6. The number of choromosoms in each of the 4 cells of its pollen tetrad would be

A. 3

B. 6

C. 12

D. 24

Answer: A

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45. In angiosperms, a mature male gametophyte is formed from a pollen mother cell through

A. 3 mitosis

B. 1 meiosis and 2 metiosis

C. 2 meiosis

D. one meiosis

Answer: B

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46. The filiform apparatus is present in

A. synergids

B. egg

C. anther wall

D. antipodal cells

Answer: A

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47. The haploid cell which divides by mitosis to form embryosac is

A. megaspore mother cell

B. microspore mother cell

C. functional megaspore

D. non-functional megaspore

Answer: C

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48. Which of the cells in the Polygonum type of embryo sac which degenerate after fertilization

A. antiploidal

B. synergids

C. secondary nucleus

D. both 1 and 2

Answer: D

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49. The number of cells in the Polygonum type of embryo sac which degenerate after fertilization

A. 2

B. 7

C. 4

D. 8

Answer: C

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50. In 82% of angiosperm families, ovule is

A. anatropous

B. orthotropous

C. amphitropous

D. circinotropous

Answer: A

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51. Which of the following statements is/are correct ?

(i) Endothecium lies below epidermis

(ii) Fusion of egg with male gamete is called apogamy

(iii) Synergids are haploid.

(iv) The point at which funicle touches the ovule is raphe.

A. a and d

B. a and b

C. a and c

D. only a

Answer: C

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

A. 3+3+2

B. 2+3+3

C. 3+2+3

D. 2+4+2

Answer: C

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

A. Egg

B. Pollen grain

C. Microspore mother cell

D. Male gamate

Answer: C

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

A. vegetative cell

B. microspore mother cell

C. microspore

D. generative cell

Answer: D

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55. Increased asthmatic attacks in certain seasons are related to

A. inhalation of seasonal pollen

B. low temperature

C. hot and humid environment

D. eating fruits preserved in tin containers

Answer: A

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56. Pollination occurs when a pollen grain

A. releases its sperm nuclei

B. lands on stigma

C. matures and has 3 nuclei

D. releases its sperm nuclei and fertilize the egg and polar nuclei

Answer: B

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57. Anemophily is pollination through

A. animals

B. air

C. birds

D. insects

Answer: B

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58. Emasculation is

A. pollnation between flowers of different plants

B. pollination betqween flower of the same plants

C. removal of the anters from the flower bud

D. artificial pollination before opening of flower

Answer: C

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

A. allogamy

B. dichogamy

C. homogamy

D. dicliny

Answer: C

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60. Self pollination (autogamy) is obligatory in closed bisexual flowers (e.g., Commelina, Ground nut). It is known as

A. cleistogamy

B. allogamy

C. geitonogamy

D. dicliny

Answer: A

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61. Wind pollinated plants differ from insects pollinated plants in having

A. coloured petal alnd large pollen

B. no coloured petals and light pollen

C. small petals and sticky pollen

D. small coloured petals and heavy pollen

Answer: B

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62. The process whereby a perfect flower is pollinated by its pollen is called

A. allogamy

B. autogamy

C. xenogamy

D. hydrogamy

Answer: B

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63. The term used when anthers and stigmas of intersexual or perfect

A. bud pollination

B. immature pollination

C. cross pollination

D. cleistogamy

Answer: A

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64. Maturation of gynoecium before anthers of the same flower of

A. protogyny

B. protandry

C. heterogamy

D. autogamy

Answer: A

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65. Cross pollination in crop plant is known as

A. allogamy

B. autogamy

C. chasmogamy

D. cleistogamy

Answer: A

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66. Hydrophily occurs in

A. Nymphaea and Nelumbo

B. Vallisneria and Zostera

C. Eichhornia and Aristolochia

D. all of the

Answer: B

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67. In Ficus, polloination takes place by

A. water

B. Bird

C. Insects

D. snails

Answer: D

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68. Anemophily type of pollination is found in

A. salvia

B. bottle brush

C. vallisneria

D. coconut

Answer: B

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69. The pollination in Vallisneria is

A. epihydrophilous

B. hypohydrophilous

C. anemophilous

D. entomophilous

Answer: A

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70. Hypohydrophilous pollination occurs in

A. Vallisneria

B. Ceratophyllum

C. Hydrilla

D. Lotus

Answer: B

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71. The presence of exerted stamens is a character of

A. wind pollination

B. water pollination

C. insect pollination

D. homogamy

Answer: A

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72. Abnormal increase in RBC count is called

A. pneumonia

B. leukemia

C. anaemia

D. polycythemia

Answer: B

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73. Sepals and petals are indistinguishable or absent in case of

A. entomophilous plants

B. anemophilous plants

C. ornithophilous plants

D. myrmechophilous plants

Answer: B

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74. In ornithophilous plants

A. nectar is not secreted

B. nectar is secreted in abundance

C. flowers are dull-coloured

D. flowers are inconspicuous

Answer: B

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75. Callistemon undergoes

A. entomophily

B. hydrophily

C. ornithophily

D. malacophily

Answer: C

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76. The plants with flowers having strong odour abundant nectar and pollen grain show

A. ornithophily

B. chiropterophily

C. entomophily

D. anemophily

Answer: B

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77. Night blooming flowers are generally

A. brightly coloured

B. scented

C. light in weight

D. white and bloom in clusters

Answer: D

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78. In Rafflesia, pollination is brought about by

A. elephant

B. carrion flies

C. birds

D. snakes

Answer: B

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79. In chamsogamy, thesex organs come in contact with each other by growth/bending/folding but flowers are always

A. open

B. close

C. fragrant

D. bright coloured

Answer: A

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80. A close mutualistic association between flower and pollinating agent is found in

A. Yucca and Yucca moth (Pronuba)

B. Fig and Blastophaga wasp

C. Ophrys and male Colpa wasp

D. All of the above

Answer: D

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81. Pollination in Lotus is carried out by

A. water

B. insects

C. wind

D. all of these

Answer: B

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82. Brightly coloured , odourless, pendent flowers (e.g., Bignoia /Pyrostegia) are likely to be poillinated by

A. Bats

B. Humming birds

C. Snails

D. Flies

Answer: B

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83. In Cannabis, pollination is carried out by

A. insects

B. wind

C. birds

D. bats

Answer: B

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84. Insect pollinated (entomophilous) flowers are characterised by

A. large number of pollens

B. dry and smooth of pollens

C. sticky pollens

D. exserted stigmas

Answer: C

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85. Hair present on the cob of corn are

A. seed hairs

B. modified haris of bracts

C. styles

D. stigmas

Answer: D

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86. Anemophily type of pollination is found in

A. Salvia

B. Bottle brush

C. Vallisneria

D. Coconut /DatePalm

Answer: D

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87. Upon fertilization, while ovule develops into seed, what structure develops from carpel ?

A. Tegman

B. Perisperm

C. Testa

D. Pericarp (fruit)

Answer: D

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88. The process whereby the male gametes are brought to the egg by a pollen tube is called

A. porogamy

B. siphonogamy

C. syngamy

D. calazogamy

Answer: B

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89. The pollen tubes grow through the solid style by separating their cell through the secretion of

A. lipase

B. protease

C. amylase

D. pectinase

Answer: D

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90. External water is not required for fertilization of

A. Cryptogams

B. Bryophytes

C. Pteridophytes

D. Spermatophytes

Answer: D

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91. In angiosperms, triple fusion produces

A. polar nucleus

B. secondary nucleus

C. zygotic nucleus

D. primary endosperm nucleus

Answer: D

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92. In angiosperm, syngamy or true fertilization refers to

A. fusion of a sperm with secondary nucleus of form zygote

B. fusion of sperm with oosphere

C. fusion of one sperm with egg and other with secondary nucleus

D. fusion of one of the sperm with a syergid

Answer: B

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93. Movement of pollen tube towards embryo sac is

A. thigmotactic

B. thermotactic

C. chemotropic

D. phototropic

Answer: C

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94. Germination of pollen grain on the stigma is

A. gemination in situ

B. germination in vivo

C. germination of vitro

D. autogamy

Answer: B

95. At the time of entering embryo sac the pollen tube contains

A. two male gametes

B. two male nuclei

C. four male gametes

D. three male gametes

Answer: A

96. Doubles fertilization is fusion of

A. one egg with two sperms

B. sperm nucleus with egg nucleus as well as with polar nuclei

C. one male gamete with egg and other male gamete with synergid

D. one male gamete with egg with other male gamete with secondary nucleus

Answer: D

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97. Route used by pollen tube for entering ovule is

A. integument

B. microphyle

C. chalaza

D. any of the above

Answer: D

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98. Write the significance of double fertilization.

A. provides stimulus to resume growth of embryo sac

B. ensures the formation of endosperm only after fertilization

C. provides some characters of male plants to endosperm

D. all the above

Answer: D

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99. The second fertilization in angiosperms is known as

A. generative fertilization

B. vegetative fertilization

C. there is no second fertilization

D. secondary fertilization

Answer: B

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100. Entry of pollen tube through micropyte while reaching the embryo sac is called

A. chalazogamy

B. mesogamy

C. prorogamy

D. pseudogamy

Answer: C

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101. When pollen tube enters by integuments then the process is called

A. porogamy

B. mesogamy

C. chalazomany

D. syngamy

Answer: B

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102. In angiosperms, pollen tube liberates its male gamets into:

A. central cell

B. egg cell

C. synergids

D. antipodal cells

Answer: C

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103. Total number of nuclei involved in double fertilization is

A. 2

B. 3

C. 4

D. 5

Answer: D

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104. Pollen tube enters the embryo sac usually

A. by penetrating egg cell

B. through one degenerated synergid

C. by destroying antipodal cells

D. between persistent synergid and central cell

Answer: B

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105. Development of embryo in angiosperm is

A. haloblastic

B. meroblastic

C. eusporangiate

D. leptosporangiate

Answer: B

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

A. scutellum

B. epiblast

C. tigellum

D. aleurone

Answer: A

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107. Pollination is stimulus necessary for the fruit development. It can be replaced mainly by

A. ethylene

B. 2, 4-D

C. cytokinin

D. auxins

Answer: D

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108. Ovule integument gets tranformed into

A. seeds

B. percarp

C. seeds

D. cotyledons

Answer: C

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109. Endosperm in angiosperms is formed from secondary nucleus

A. after fertilization but prior to embryo formation

B. before fertilization but after but after embryo formation

C. after embryo formation

D. during fertilization

Answer: A

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110. Endosperm of angiosperms is different from that of gymnosperms because

A. angiosperms have fats

B. endosperm is formed before fertilization

C. endosperm isnot formed before fertilization

D. it is diploid

Answer: C

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111. The most common type of development of endosperm is

A. cellulose and pectin

B. helobial

C. nuclear

D. perispermic

Answer: C

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112. Coconut has

A. central liquid multinucleated endosperm

B. helobial endosperm

C. both (1) and (2)

D. exalbuminous endosperm

Answer: A

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113. When only the first division is followed by cytokinesis, the development of endosperm is called

A. cellular

B. nuclear

C. ruminate

D. helobial

Answer: D

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114. Endosperm is hard/stony in

A. Areca nut

B. Date palm

C. lvory palm

D. all of these

Answer: D

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115. Endosperm is hemicellulose in Date palm and oily in Coconut. What type of endosperm is found in cereals ?

A. Proteinaceous

B. Starchy

C. Fatty

D. Cellulosic

Answer: B

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116. A homogamous tall pistilltate plant (TT) is crossed with homogamous dwarf staminate plant (tt). What is the

genotype of endosperm?

A. TTT

B. TTt

C. Ttt

D. ttt

Answer: B

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117. Milky water of green Coconut is

A. liquid chalaza

B. liquid nucellus

C. Liquid/free nuclear endosperm

D. liquid female gametophyte

Answer: C

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118. Number of chromosomes is 12 in endosperm. What shall be the number in megaspore mother cell .

A. 8

B. 36

C. 12

D. 18

Answer: A

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119. The cell of endosperm have 24 chromosomes. What will be the number of chromosomes in the gametes?

A. 8

B. 16

C. 72

D. 24

Answer: A

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120. How many meiosis are required to produce 50 seeds of tabacco

A. 62

B. 100

C. 63

D. 50

Answer: C

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121. The number of chromosomes in radicle is 16. What will be number of chromosomes in pollen tube nucleus,

antipodals , secondary nucleus of endosperm respectively ?

A. 8,8,16,24

B. 8,8,16,16

C. 16,16,32,48

D. 8,8,16,48

Answer: A

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122. The male gamete is x and egg is 3x. The ploidy level in embryo and endosperm will be

A. 4s in embryo and 4x in endosperm

B. 4x in embryo and 7x in endosperm

C. 4x in embryo and 6x in endosperm

D. 6x in embryo and 12x in endosperm

Answer: B

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123. Perisperm is

A. persistent/remnants of nucellus

B. degenerated secondary nucleus

C. degenerated synergids in seed

D. remains of endosperm

Answer: A

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124. The term 'self sterility' implies

A. when pollen grains are fertile

B. when pollen grains are sterile

C. when ovules are not fertile

D. when flowers are neutral

Answer: B

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125. Female plant is diploid and male plantis tetraploid. Find out the correct match

A. Embryo (3n), endosperm (4n), integu-ments (2n), egg (n) and pollen grain (2n)

B. Embryo (2n), endosperm (6n), integu-ments (2n), egg (4n) and pollen grain (4n)

C. Embryo (2n), endosperm (3n), integu-ments (2n), egg (n) and pollen grain (n)

D. Embryo (6n), endosperm (4n), integu-ments (3n), egg (n) and pollen grain (2n)

Answer: A

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126. Following components are haploid, diploid or triploid

(A) oosphere (B) microsphere (C) sunergids (D) antipodals (E) oospore (F) nucellus (G) placenta (chalaza) (I) endosperm (J) tapetum

Which of following groups show the correct sequence of the ascending order of ploidy in ovule/seed ?

A. C,B,D

B. A,E,I

C. E,F,G

D. J,E,H

Answer: B

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127. Which of the following have double endosperm?

A. Raphanus

B. Coconut

C. Zea mays

D. Betel nut

Answer: B

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128. Conifers differ from grasses in the

A. absence of pollen tubes

B. formation of endosperm before fetili-zation

C. production of seeds from ovules

D. lack of xylem tracheids

Answer: B

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129. Parthenocarpic fruits are produced by

A. treating plants with PMA

B. treating plants with low concentration of auxin and gibberellins

C. removing anthers from flowers before release of pollen grain

D. raising plants from vernalised seeds

Answer: B

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130. What does self incompatibility provides for a plant ?

A. Means of transferring pollen to another plant

B. Means of coordinating the fertilization of egg with the development of store before if fertilize the egg cell

C. A mean of destroying foreign pollen before it fertilizes the egg cell

D. A biological block to self fertilization so that cross fertilization is assured

Answer: D

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131. One meiosis produces how many male gametes ?

A. 4

B. 1

C. 2

D. 8

Answer: D

132. If number of chromosomes in root cell of male plant is 40 and in leaf cell of female plant is 60, what will be number of chromosomes in their endosperm ?

A. 50

B. 120

C. 70

D. 80

Answer: D

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133. Raphe is

A. part of flower

B. nucellus

C. ridge formed by funicle

D. funicle attached to ovule

Answer: C

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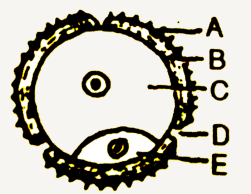
134. In the given diagram name the parts A, B, C and D and E .



A. A-germ pore, B-generative cell, C - intine , D-exine, E-vegetative cell

B. A-germ pore , B- generative cell, C-axine, D-intine , E-vegetative cell

C. A-intine, B-exine, C-germ pore, D-generative cell. E-vegetative cell

D. A-exine, B-intine, C-vegetative cell, D-germ pore, E-generative cell

Answer: D

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135. Identify the wrong statement regarding post fertilisation development

A. the ovary wall develops into pericarp

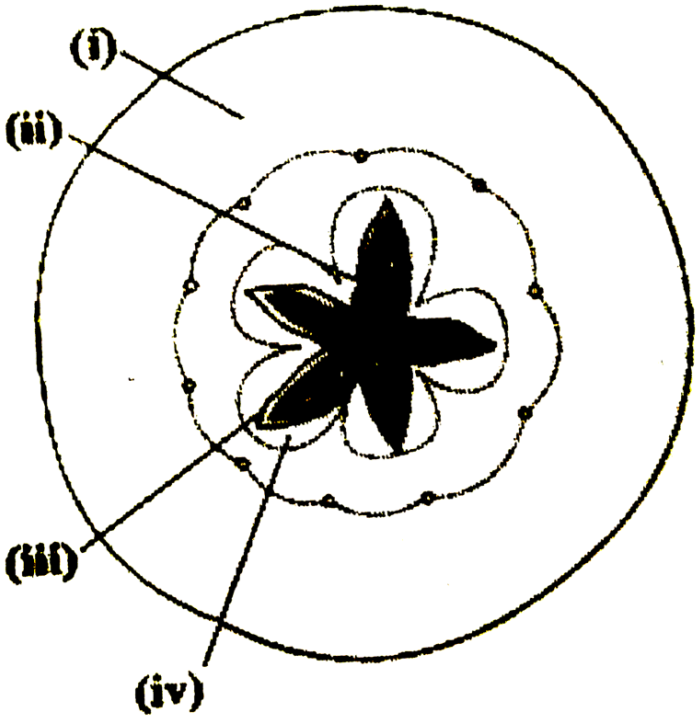
B. the outer integument of ovule develops into tegmen

C. the fusion nucleus (triple nucleus) develops into endosperm

D. the ovule develops into seed

Answer: B

136. Go through the given figure of a fruit



Find out the option representing correct labelling and the type of fruit ,

A. (i) Thalamus, (ii) Seeds, (iii) Endocarp, (iv) Mesocarp, False fruit

B. (i) Epicarp, (ii) Seeds, (iii) Endocarp, (iv) Mesocarp, True fruit

C. (i) Thalamus, (ii) Seeds, (iii) Endocarp, (iv) Mesocarp, Parthenocarpic fruit

D. (i) Mesocarp, (ii) Seeds, (iii) Aril, (iv) Endocarp, False fruit

Answer: A

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137. Match the Column

1.	Budding	(a)	*Plasmodium*
2.	Regeneration	(b)	*Hydra*
3.	Multiple fission	(c)	*Leishmania*
4.	Binary fission	(d)	*Planaria*

A. (i) Degenerating antipodal cells,

(ii) Zygote,

(iii) Primary endosperm cell,

(iv) Primary endosperm nucleus,

(v) Degenerating synergids,

B. (i) Degenerating Synergids cells,

(ii) Zygote,

(iii) Primary endosperm cell,

(iv) Primary endosperm nucleus,

(v) Degenerating antipodal cells

C. (i) Zygote,

(ii) Degenerating antipodal cells,

(iii) Primary endosperm cell,

(iv) Primary endosperm nucleus,

(v) Degenerating synergids,

D. (i) Degenerating synergids,

(ii) Egg,

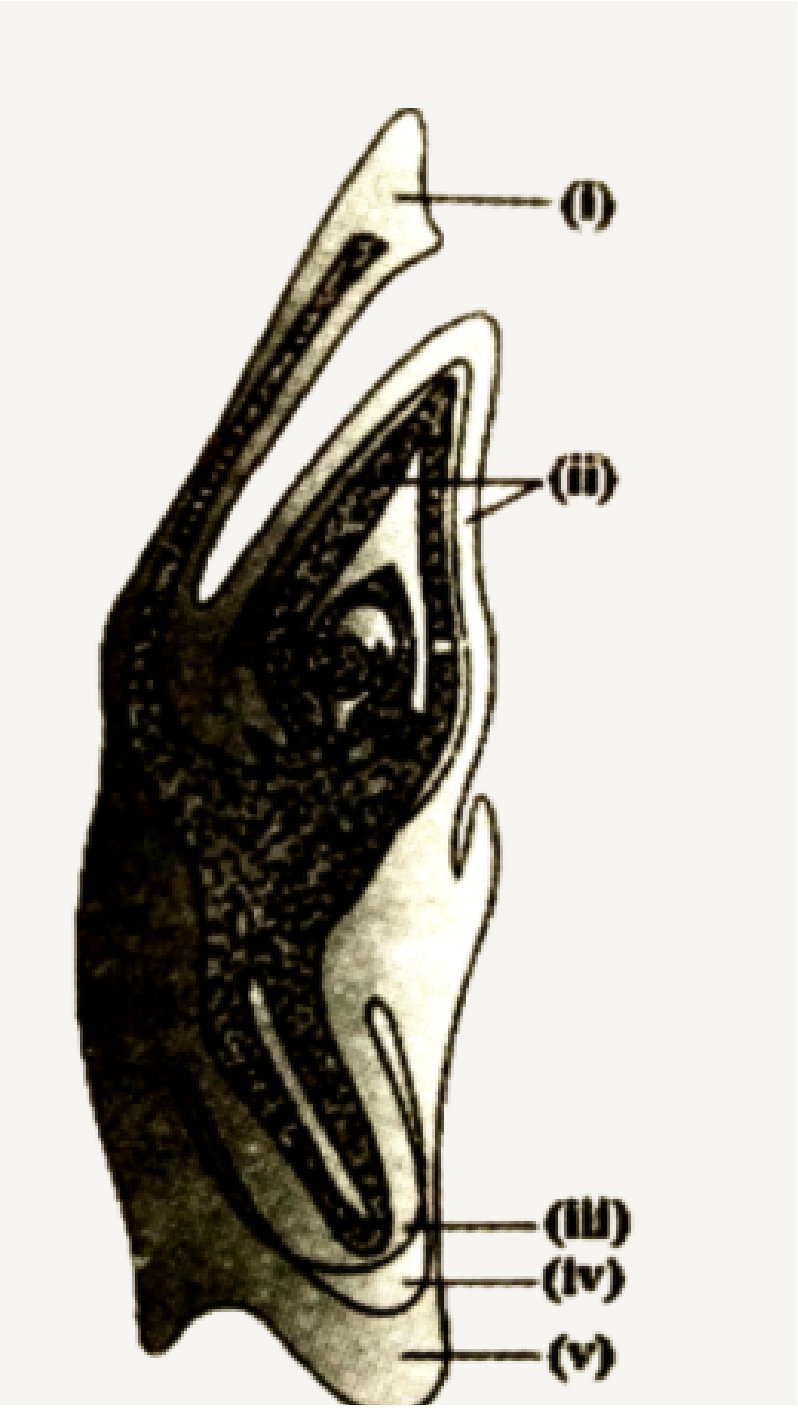
(iii) Central cell,

(iv) Primary endosperm cell,

(v) Degenerating antipodal cells

Answer: B

138. Go through this figure of L.S. of an embryo of grass



A. (i) Coleptile, (ii) Scutellum ,(iii) Radicle, (iv) Root cap, (v) Coleorhiza

B. (i) Coleptile, (ii) Scutellum ,(iii) Radicle, (iv) Coleorhiza, (v) Root cap,

C. (i) Scutellum , (i) Coleptile, (iii) Radicle, (iv) Root cap, (v) Coleorhiza

D. (i) Shoot apex, (ii) Scutellum ,(iii) Radicle, (iv) Coleorhiza, (v) Root cap

Answer: C

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139. Which one of the following shows the last diploid stage in the life cycle of angiosperms ?

A. Pollen grain

B. Nucellus

C. Zygote

D. Microspore mother cell

Answer: D

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140. In angiosperms , which one of the following processes does not involve an unequal division ?

A. Formation of microspores

B. Formation of generative cell

C. Zygotic embryogenesis

D. All of the above

Answer: A

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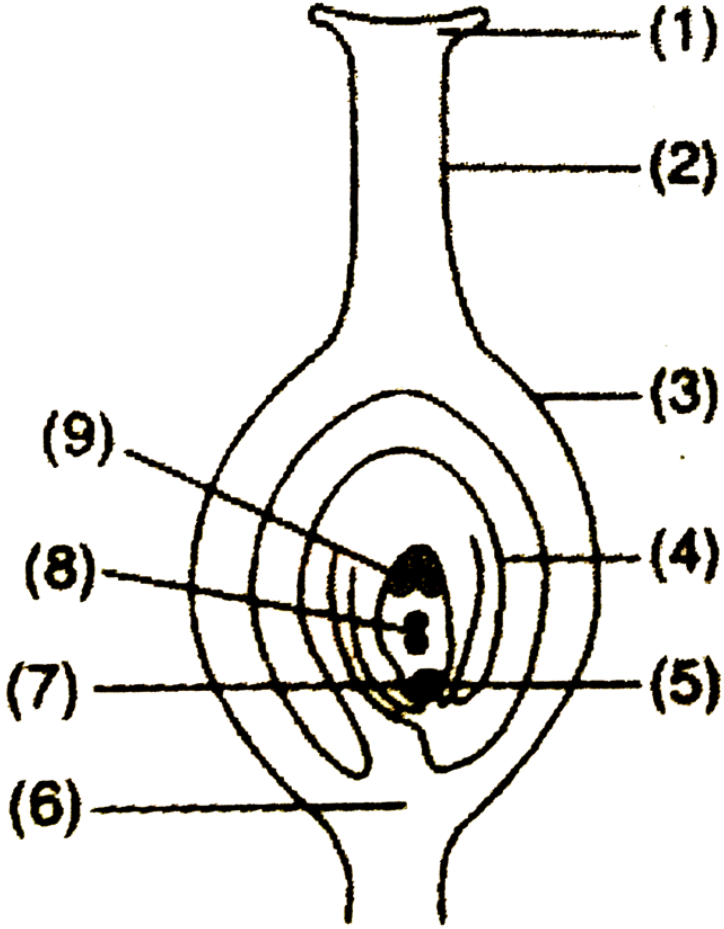
141. The given diagram shows the carpel of a flowering plant. After fertilization , many structures undergo change to produce parts of fruit/seed. Fruit wall, embryo, endosperm and seed coat are shown in the diagram

labelled respectively as



A. 3,5,8 and 6

B. 3, 7, 8 and 4

C. 9, 6, 5 and 4

D. 9, 7, 5 and 3

Answer: C

142. In a cross between a tetraploid female plantand a diploid male plant of mulberry, the endosperm would be

A. Hexaploid

B. Triploid

C. Tetraploid

D. Pentaploid

Answer: D

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143. What is true about cleistogamy?

A. It occurs in unisexual flowers

B. It produces assured seed-set even in the absence of pollinators

C. it leads to introduction of new useful characters

D. It is a method of geitonogamy

Answer: B

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144. Find out the correct statement

A. The plant Strobilanthes kunthiana flower only once every year

B. Monkeys and apes show cyclical changes during reproduction called oestrous cycle

C. Bomboo species flower only once in their life time

D. All of the above

Answer: C

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145. Flower with a feathery and sticky stigma, numerous light pollen, reduced petals is characteristically

A. Month pollinated flowers

B. Bird pollinated flower

C. Bee pollinated flower

D. Wind pollinated flower

Answer: D

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146. The fruits showing edible thalamus are

A. Apple, custard, apple , guava

B. Apple , straberry , pear

C. Apple , pineapple, strawberry

D. Jackfruit, guava, pineapple

Answer: B

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147. Which one of the following structure found in dicot seed will be genetically identical with its maternal plant ?

A. Testa

B. Radicle

C. Plumule

D. Cotyledon

Answer: A

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148. After pollination which of the following events is crucial for fertilization to occurs in flowering plants ?

A. Sperm swim to the egg and the polar nuclei

B. Petals close around the reproductive parts

C. Meiosis occurs within the pollen grain

D. A pollen tube grows from the stigma to the ovule

Answer: D

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149. Given below are certain combinations. Select the correct ones.

(i) Ceratophyllum - Epihydrophilly

(ii) Maize - Anemophily

(iii) Aristolochia - Zoophily

(iv) Adansonia- Chiropterophily

(v) Salvia - Hypohydrophily

(vi) Arisaema (snake plant) - Malacophily

(vii) Kigelia - Entomophily

A. (i), (ii), (iii), (vi)

B. (i), (iii), (iv), (vi) , (vii)

C. (ii), (iii), (iv), (vi)

D. (ii), (iii), (iv), (vii)

Answer: C

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150. If a leaf cell of gymnosperm plant had 24 chromosomes, then its endosperm cell would cotain

A. 24 chromosomes

B. 36 chromosomes

C. 12 chromosomes

D. 48 chromosomes

Answer: C

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151. The proteinaceous substance involved in sporophytic incompatibility and stored in the exine is derived from

A. Tapetum

B. Microspore

C. Anther locule

D. Stigmatic papillae

Answer: A

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152. Adventative embryony in Citus is due to

A. Integuments

B. Nucellus

C. Synergids

D. Zygotic embryo

Answer: B

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153. A pistillate flower of tetraploid angiosperm is pollinated by pollen from staminate flower of diploid

plant. What would be the ploidy iin endosperm of seeds thus formed ?

A. 3n

B. 4n

C. 5n

D. 6n

Answer: C

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154. In a guava fruit there were 300 seeds. How many meiotic divisions must have been involved in the development of this fruit ?

A. 75

B. 300

C. 375

D. 450

Answer: C

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155. Vegetative propagation mint occurs by

A. Rhozome

B. Sucker

C. Runner

D. Offset

Answer: B

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156. Examine the figures (A-D) given below and select the right option out of 1-4 in which all the four structure

A,B,C,D are identified correctly

A	B	C	D
(1) Rhizome	Sporan-giophore	Polar cell	Globule
(2) Runner	Archego-niophore	Syner-gid	Antheri-dium
(3) Offset	Antheridio-phore	Antipo-dals	Oogo-nium
(4) Sucker	Seta	Megas-pore mother cell	Gemma cup

A. `{:("A",B,C,D),("Rhizome","Sporangiophore","Polar cell","Globule"):}

B.

A	B	C	D
Runner	Archegoniophore	Synergid	Antheridium

C.

A	B	C	D
Offset	Antheridio	Antipodals	Oogonium

D.

A	B	C	D
Sucker	Seta	Megaspre mother cell	Gemma cup

Answer: C

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157. Vegetative propagation in Pistia occurs by

A. Stolen

B. Offset

C. Runner

D. Sucker

Answer: B

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158. Apomictic embryos in citrus arise from

A. Dipolid egg

B. Synergids

C. Maternal sporophytic tissue in ovule

D. Antipodal cells

Answer: C

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159. Wind pollinated flowers are

A. Small, producing nectar and dry pollen

B. Small, brightly coloured, producing large number of pollen grains

C. Small, producing large numbe of dry pollen grains

D. Large, producing abundant neatar and pollen

Answer: C

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160. In angiosperms, functional megaspore develops into

A. Embryo sac

B. Ovule

C. Endosperm

D. Pollen sac

Answer: A

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161. Nucellar polyembryony was reported by

A. Leeuwenhoek

B. Robert Brown

C. Robert Hoek

D. Darwin

Answer: A

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

A. 42

B. 63

C. 84

D. 21

Answer: B

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

A. female gametophyte is free and evolution dispersed like seeds

B. female gametophyte lack archegonia

C. megaspores posses endosperm and embryo sourrounded by seed coat

D. embryo develops in female gametophyte which retained on parent sporophyte

Answer: D

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164. Wind pollination is common in

A. Legumes

B. Lilies

C. Grasses

D. Orchids

Answer: C

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165. What is common between vegetative reproduction and Apomixis

A. Both are applicable to only dicot plants

B. Both bypass the flowering phase

C. Both occur round the year

D. Both produce progency identical to the parent

Answer: D

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166. Plants with ovaries having only one ore a few ovules are generally pollinated by

A. Birds

B. Wind

C. Bees

D. Bufferflies

Answer: B

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167. Which one of the following statement is wrong ?

A. Pollen grains in some plants remainviable for months

B. Intine is made up of cellulose and pectin

C. When pollen is sheed at two -celled state, double fertilization does not take place

D. Vegetative cell is larger than generative cell

Answer: C

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168. What is the function of germ pore?

A. Initiation of pollen tube

B. Release of male gametes

C. Emergence of radicle

D. Absorption of water for seed germination

Answer: A

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

A. Zostera

B. Salvia

C. Fig

D. Commllina

Answer: D

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170. Both autogamy and geitonogamy are prevented in

A. Cucumber

B. Castor

C. Maize

D. Papaya

Answer: D

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171. Product of sexual reproduction generally generates

A. New genetic combination leading to variation

B. Large biomass

C. Longer viability of seeds

D. Prolonged dormancy

Answer: A

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172. Perisperm differs from endosperm in

A. Being a diploid tissue

B. Its formation by fusion of secondary nucleus with several sperms

C. Being a haploid tissue

D. Having no reserve food

Answer: A

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173. Advantage of cleistogamy is

A. No dependence on pollinators

B. Vivipary

C. Higher genetic variability

D. More vigorous offspring

Answer: A

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174. Megasporangium is equivalent to

A. Nucellus

B. Ovule

C. Embryo sac

D. Fruit

Answer: B

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175. Which one of the following statement is correct ?

A. Endothecium produces the microsores

B. Tapetum nourishes the develping pollen

C. Hard outer layer of pollen is called intine

D. Sporogenous tissue is haploid

Answer: B

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176. Geitonogamy involves

A. Fertilization of a flower by the pollen from a flower of another plant belonging to a distant population.

B. Fertilization of a flower by the pollen from another flower of the same plant.

C. Fertilization of a flower by the pollen from the same flower.

D. Fertilization of a flower by the pollen from a flower of another plant in the same population

Answer: A::B

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177. Function of filiform apparatus is to :-

A. Guide the entry of pollen tube

B. Recognize the suitable pollen at sigma

C. Stimulate division of generative cell

D. Produce nectar

Answer: A

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178. Pollen tablets are available in the market for

A. Ex situ conservation

B. In vitro fertilization

C. Breeding programmes

D. Supplementing food

Answer: D

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

A. Xenogamy

B. Apogamy

C. Cleistogamy

D. Geitonogamy

Answer: D

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180. Which one of the following statement is not true ?

A. Pollen grains of some plants cause servere allergies and bronchies afflications in some people

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

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

D. Pollen grains are rich in nutriens and they are used in the form of tablets and syrups

Answer: C

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181. The hilum is a scar on the :

A. fruit, where it was attached to pedicel

B. fruit, where style was present

C. seed, where micropyle and present

D. seed, where funicle was attached

Answer: D

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

A. Nectar and pollen grains

B. Floral fragrance and calcium crystals

C. Protein pellicle and stigmatic exudates

D. Colour and large size of flower

Answer: A

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183. A single large shield shape terminal cotyle-don is monocot embryo is called

A. epiblast

B. coleorrhiza

C. scutellum

D. coleoptile

Answer: C

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184. Filifom apparatus is characteristic feature of :

A. generative cell

B. nucellar embryo

C. aleurone cell

D. synergids

Answer: D

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185. In angiosperms, microsporogenesis and megasporogeneis

A. occur in anther

B. form gametes without further divisions

C. involve meiosis

D. occur in ovule

Answer: C

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186. Coconut water from a tender coconut is:

A. immature embryo

B. free nuclear endosperm

C. inncermost layers of the seed coat

D. degenerated nucellus

Answer: B

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187. Which of the following statements is not correct

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

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

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

D. Pollen grains of many species can germinate on the stigma of a flower, but only one pollen tube of the

same species grows into the style

Answer: D

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

A. Budding

B. Somatic hybridisation

C. Apomixis

D. Sporulation

Answer: C

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189. Which of the following statement is not true ?

A. Exine of pollen grains is made up of sporopollenin

B. Pollen grains of many species cause severse allergies

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

D. Tapetum helps in the dehiscence of anther

Answer: D

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190. In majority of angiosperms:

A. egg has a filiform apparatus

B. there are numerous antipodal cells

C. reduction division occurs in the gaspore mother cells

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

Answer: C

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191. 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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192. Ovule is technically equivalent to

A. megasporangium with one megaspore

B. megasporophyll

C. megaspore mother cell

D. megaspore

Answer: A

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

A. Water

B. Bee

C. wind

D. Bat

Answer: C

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194. Functional megaspore in an angiosperm develops into

A. ovule

B. endosperm

C. embryo sac

D. embryo

Answer: C

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195. Double fertililzation is exhibited by

A. Gymlnosperms

B. Algae

C. Fungi

D. Angiosperms

Answer: D

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196. A dioecious flowering plant prevents both

A. autogamy and xenogamy

B. autogamy and geitonogamy

C. geitonogamy and xenogamy

D. cleistogamy and xenogamy

Answer: B

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197. Attractants and reward are required for

A. anemphily

B. entomophily

C. hydrophily

D. cleistogamy

Answer: B

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

A. Sporopollenin

B. Oil content

C. Cellulose intine

D. Pollenkitt

Answer: A

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199. Offesets are produced by

A. Parthenogenesis

B. Parthenocarpy

C. Mitotic divisions

D. Meiotic divisions

Answer: C

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200. Winged pollen grains are present in

A. Pinus

B. Mango

C. Cycas

D. Mustard

Answer: A

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201. Double fertilization is

A. Syngamy and triple fusion

B. Fusion of two male gametes with one egg

C. Fusion of one male gamete with two polar nuclei

D. Fusion of two male gametes of a pollen tube with two different eggs.

Answer: A

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202. Pollen grains can be stored for several years in liquid nitrogen having a temperature of

A. $160^\circ C$

B. $-196^\circ C$

C. $-80^\circ C$

D. $-120^\circ C$

Answer: B

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