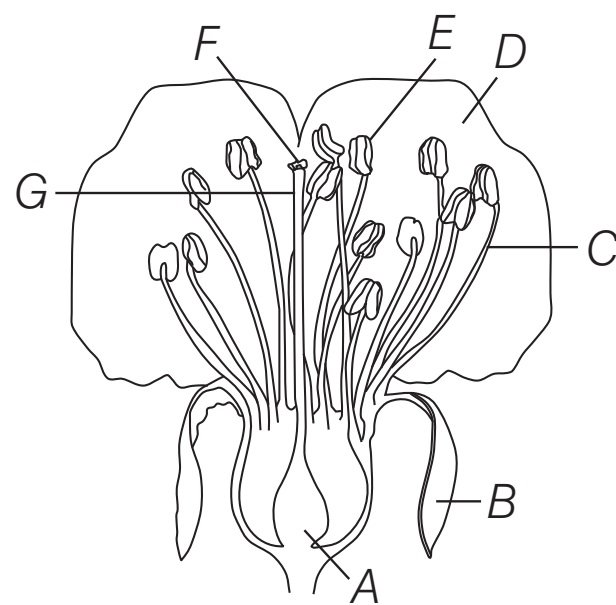


SEXUAL REPRODUCTION IN FLOWERING PLANTS

TOPIC 1 ~ Flower and Development of Gametes

- 1 Identify *A* to *G* in following figure and answer accordingly.



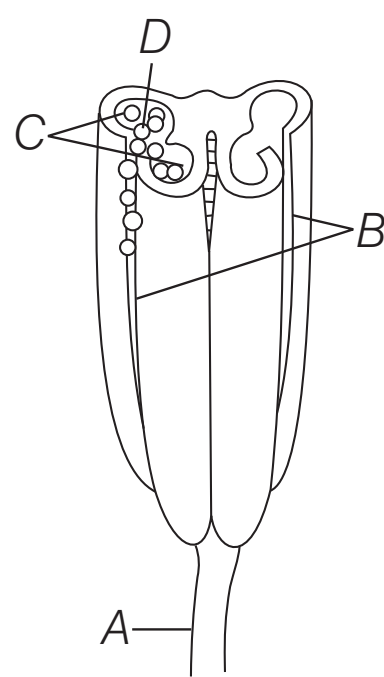
- (a) A–Ovary, B–Filament, C–Sepal, D–Petal, E–Style, F–Stigma, G–Anther
(b) A–Sepal, B–Ovary, C–Petal, D–Filament, E–Anther, F–Stigma, G–Style
(c) A–Ovary, B–Sepal, C–Filament, D–Petal, E–Anther, F–Stigma, G–Style
(d) A–Petal, B–Anther, C–Stigma, D–Style, E–Filament, F–Sepal, G–Ovary

- 2 Find odd one out.

- (a) Stamen (b) Stigma
(c) Style (d) Ovary

JIPMER 2019

- 3 Identify *A* to *D* in the following diagram.



- (a) A – Filament (stalk) , B – Pollen sac, C – Pollen grain, D – Line of dehiscence
(b) A – Filament (stalk), B – Pollen sac, C – Line of dehiscence, D – Pollen grain
(c) A – Line of dehiscence, B – Filament (stalk) , C – Pollen sac, D – Pollen grains
(d) A – Filament (stalk), B – Line of dehiscence, C – Pollen sac, D – Pollen grains

- 4 The terminal structure of stamen is called

- (a) pollen (b) filament
(c) anther (d) All of these

- 5 The lengthwise running groove on anther which separate theca is called

- (a) rupture line
(b) line of dehiscence
(c) suture of anther
(d) None of the above

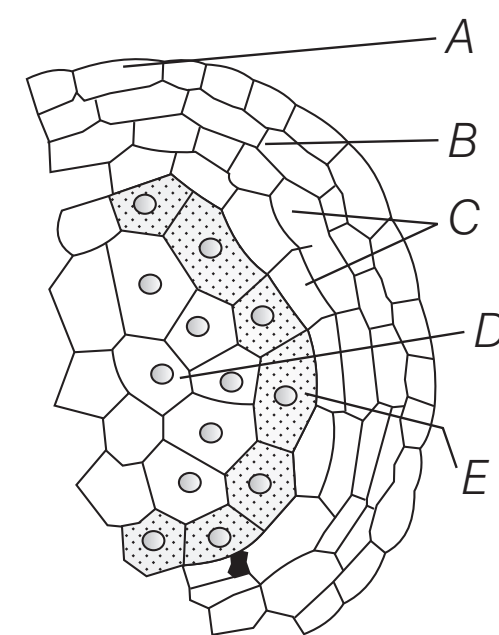
- 6 Number of microsporangia in an angiospermic anther is

- (a) 1 (b) 2 (c) 3 (d) 4

- 7 Microsporangium develops into

- (a) pollens (b) microgametes
(c) megagametes (d) pollen sac

- 8 Identify *A* to *E* in the following diagram.



- (a) A–Tapetum, B–Microspore mother cell, C–Middle layer, D–Endothecium, E–Epidermis
(b) A–Epidermis, B–Middle layer, C–Microspore mother cell, D–Tapetum, E–Endothecium
(c) A–Middle layer, B–Epidermis, C–Tapetum, D–Microspore mother cell, E–Endothecium
(d) A–Epidermis, B–Endothecium, C–Middle layer, D–Microspore mother cell, E–Tapetum

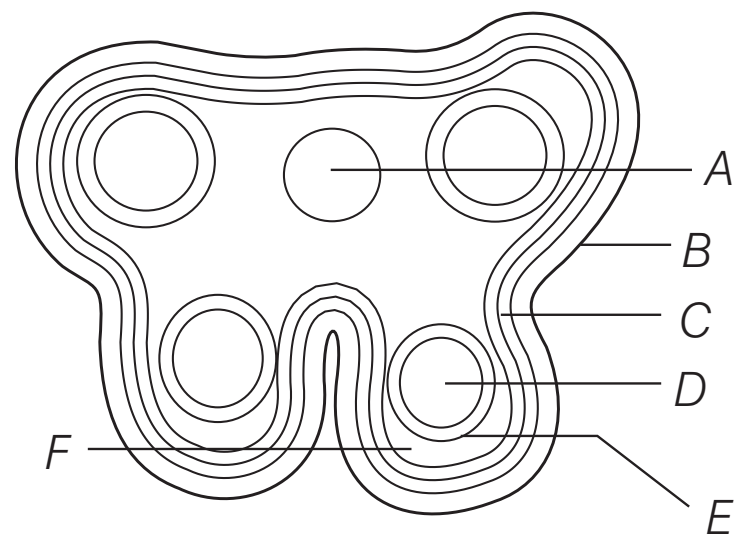
- 9 The innermost layer of microsporangium is

- (a) tapetum (b) endothecium
(c) middle layer (d) epidermis

- 10 Centre of each microsporangium is occupied by

- (a) sporogenous tissue
(b) tapetum
(c) central tissue
(d) microspore mother cell

11 Identify *A* to *E* in the following diagram.



- (a) A–Epidermis, B–Endodermis, C–Connective, D–Sporogenous tissue, E–Middle layers, F–Tapetum
 (b) A–Endodermis, B–Connective, C–Epidermis, D–Tapetum, E–Sporogenous tissue, F–Middle layers
 (c) A–Tapetum, B–Middle layers, C–Sporogenous tissue, D–Connective, E–Endodermis, F–Epidermis
 (d) A–Connective, B–Epidermis, C–Endothecium, D–Sporogenous tissue, E–Tapetum, F–Middle layers
- 12** The outermost wall layer of microsporangium in anther is
 (a) endothecium (b) tapetum
 (c) middle layer (d) epidermis
- 13** Which of the following perform microsporogenesis?
 (a) Microspore mother cell (b) Pollen mother cell
 (c) Both (a) and (b) (d) None of these
- 14** The process of formation of microspores from pollen mother cell through ... *A*... is called ... *B*... . Microspores are arranged in ... *C* As the anthers matures and dehydrate, microspores develop into the ...*D*... .
 Fill in the blanks *A* to *D*.
 (a) A–pollen grains, B–microspore tetrad, C–microsporogenesis, D–meiosis
 (b) A–microspore tetrad, B–microsporogenesis, C–meiosis, D–pollen grains
 (c) A–microsporogenesis, B–microspore tetrad, C–pollen grain, D–meiosis
 (d) A–meiosis, B–microsporogenesis, C–microspore tetrad, D–pollen grains
- 15** Microspore tetrad (pollen grains) is the result of
 (a) mitotic cell division (b) meiotic cell division
 (c) Both (a) and (b) (d) None of these
- 16** Dehiscence of anther in mesophytes is caused by
 (a) hydration of anthers (b) dehydration of anthers
 (c) mechanical injury (d) None of these
- 17** Pollens have two prominent walls which are ...*A*... and ...*B*... . Here *A* and *B* refers to
 (a) A–intine, B–protein coat
 (b) A–exine, B–intine
 (c) A–sporopollenin, B–intine
 (d) A–sporopollenin, B–exine

18 Intine is made up of

- (a) cellulose (b) pectin
 (c) Both (a) and (b) (d) protein

19 Exine of pollen is made up of

- (a) sporopollenin
 (b) sporogenous tissue
 (c) spongiform tissue
 (d) inorganic material

20 Patterns and designs of exine of pollen grains are the characteristic features of

- (a) species of plant (b) genus of plants
 (c) order of plants (d) None of these

21 Hardest substance in plant kingdom is **JIPMER 2019**

- (a) saple (b) corolla
 (c) sporopollenin (d) anther

22 The sporopollenin is non-degradable because

- (a) it can withstand strong acids
 (b) it is resistant at very high temperature
 (c) no enzyme degrade it
 (d) All of the above

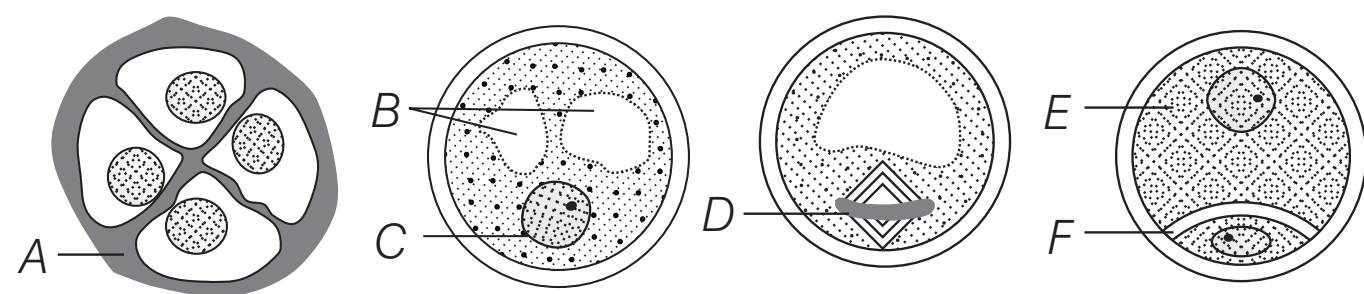
23 Which of the following has proved helpful in preserving pollen as fossils? **NEET 2018**

- (a) Oil content (b) Cellulosic intine
 (c) Pollenkitt (d) Sporopollenin

24 The functions of germ pore is/are

- (a) emergence of radicle
 (b) absorption of water for seed germination
 (c) initiation of pollen tube
 (d) All of the above

25 Identify the structures marked *A* to *F* in the given diagram.



- (a) A–Asymmetric nucleus, B–Nucleus, C–Generative cell, D–Vegetative cell, E–Pollen, F–Pollen tetrad
 (b) A–Pollen tetrad, B–Pollen, C–Generative cell, D–Vegetative cell, E–Asymmetric spindle, F–Nucleus
 (c) A–Pollen tetrad, B–Vacuole, C–Nucleus, D–Asymmetric spindle, E–Vegetative cell, F–Generative cell
 (d) A–Vacuole, B–Nucleus, C–Pollen tetrad, D–Vegetative cell, E–Asymmetric spindle, F–Generative cell
- 26** When the pollen grain is mature, it contains two cells, the ... *A* ... and ... *B*
 (a) A–generative cell, B–spore mother cell
 (b) A–vegetative cell, B–spore mother cell
 (c) A–spore mother cell, B–male gamete
 (d) A–vegetative cell, B–generative cell

27 To achieve 3-celled stage in angiosperms, which cell of the pollen grain divides to form two male gametes ?

- (a) Vegetative cell
- (b) Generative cell
- (c) Microspore mother cell
- (d) None of the above

NEET 2018

28 60% of the angiosperms shed their pollens at the

- (a) 2-celled stage
- (b) 3-celled stage
- (c) 4-celled stage
- (d) 1-celled stage

29 Male gametophyte in angiosperms produces

- (a) two sperms and a vegetative cell
- (b) single sperm and a vegetative cell
- (c) single sperm and two vegetative cell
- (d) three sperms

CBSE-AIPMT 2015

30 Pollen tablets are available in the market for

- (a) *in vitro* fertilisation
- (b) breeding programmes
- (c) supplementing food
- (d) *ex situ* conservation

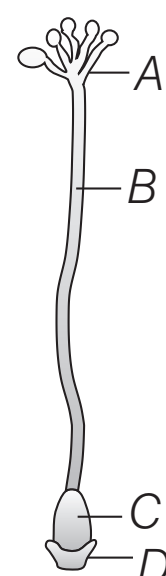
CBSE-AIPMT 2014

31 Pollen grains can be stored for several years in liquid nitrogen having temperature of

- (a) -196°C
- (b) -80°C
- (c) -120°C
- (d) -160°C

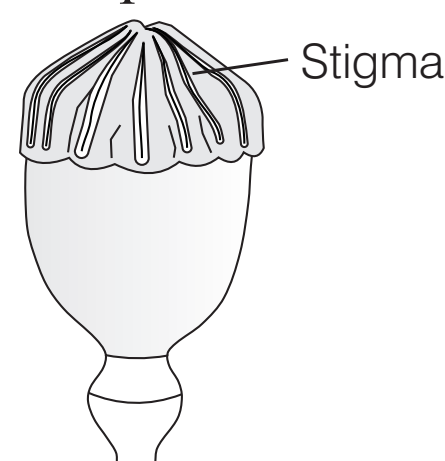
NEET 2018

32 In the given diagram of pistil, in which part fertilisation takes place?



- (a) D
- (b) C
- (c) B
- (d) A

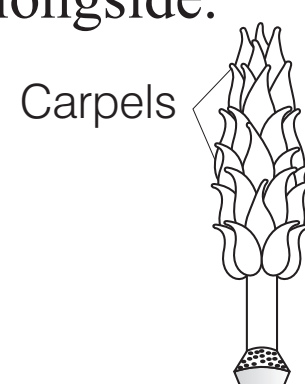
33 Identify the type of pistil in the diagram.



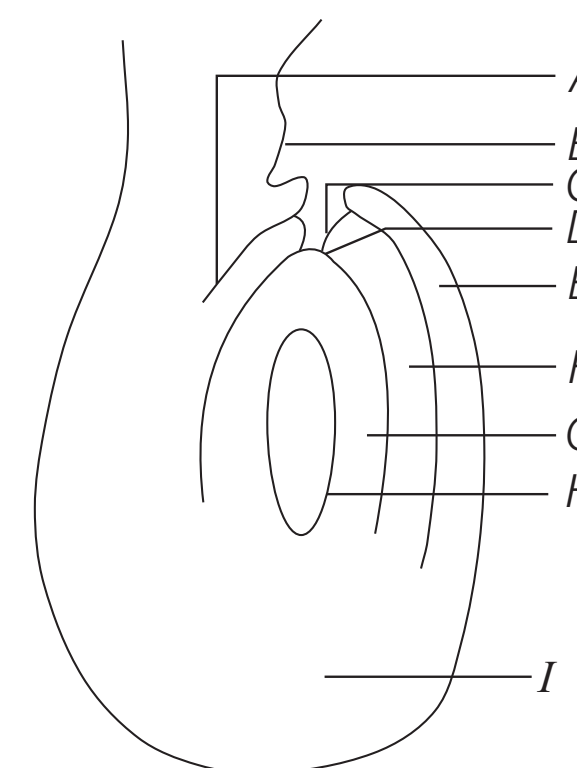
- (a) Multicarpellary, apocarpous
- (b) Multicarpellary, syncarpous
- (c) Multicarpellary, pistillate
- (d) Monocarpellary, apocarpous

34 Identify the type of pistil in the diagram alongside.

- (a) Monocarpellary, syncarpous
- (b) Monocarpellary, apocarpous
- (c) Multicarpellary, syncarpous
- (d) Multicarpellary, apocarpous



35 Identify A to I in the given diagram.



- (a) A—Chalazal end, B—Embryo sac, C—Nucellus, D—Inner integuments, E—Outer integuments, F—Micropylar pole, G—Micropyle, H—Funicle, I—Hilum
- (b) A—Inner integuments, B—Nucellus, C—Embryo sac, D—Chalazal end, E—Hilum, F—Funicle, G—Micropyle, H—Micropylar end, I—Outer integuments
- (c) A—Hilum, B—Funicle, C—Micropyle, D—Micropylar pole, E—Outer integuments, F—Inner integuments, G—Nucellus, H—Embryo sac, I—Chalazal pole
- (d) A—Micropylar end, B—Micropyle, C—Funicle, D—Hilum, E—Outer integuments, F—Inner integuments, G—Nucellus, H—Embryo sac, I—Chalazal end

36 The stalk which joins ovule and placenta is called

- (a) funicle
- (b) hilum
- (c) chalaza
- (d) micropyle

37 The ovule of an angiosperm is technically equivalent to

NEET 2016

- (a) megasporangium
- (b) megasporophyll
- (c) megaspore mother cell
- (d) megaspore

38 An ovule is a

- (a) differentiated megasporangium
- (b) dedifferentiated megasporangium
- (c) integumented megasporangium
- (d) redifferentiated megasporangium

39 Chalazal pole is present

- (a) opposite to micropyle
- (b) at the origin of integuments
- (c) opposite to nucellus
- (d) near the embryo sac

40 Mass of cells enclosed by integuments is called

- (a) nucellus
- (b) embryo
- (c) ova
- (d) pollen

41 Embryo sac is also called

- (a) female gamete
- (b) synergids
- (c) female gametophyte
- (d) egg of angiosperm

42 Megasporogenesis is

- (a) formation of fruits
- (b) formation of seeds
- (c) formation of megaspores
- (d) Both (b) and (c)

43 Megaspore mother cell is found near the region of

- (a) micropyle (b) chalaza
(c) nucellus (d) integuments

44 In majority of angiosperms

NEET 2016

- (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

45 In angiosperms, microsporogenesis and megasporogenesis

CBSE-AIPMT 2015

- (a) occur in anther
(b) form gametes without further divisions
(c) involves meiosis
(d) occur in ovule

46 Functional megaspore in an angiosperm develops into

- (a) ovule (b) endosperm **NEET 2017**
(c) embryo sac (d) embryo

47 Which is the most common type of embryo sac in angiosperms?

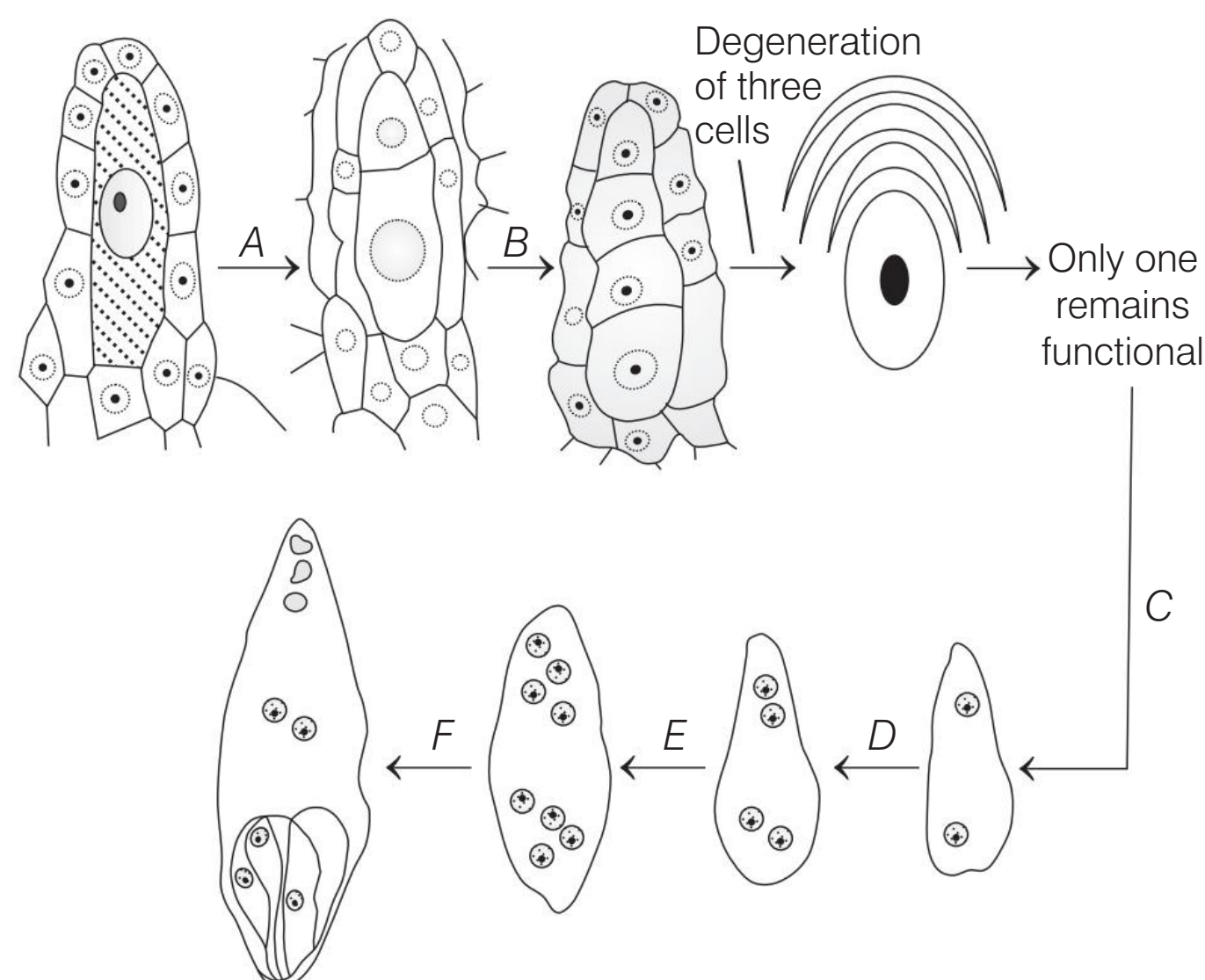
NEET (Odisha) 2019

- (a) Tetrasporic with one mitotic stage of divisions
(b) Monosporic with three sequential mitotic divisions
(c) Monosporic with two sequential mitotic divisions
(d) Bisporic with two sequential mitotic divisions

48 Single megasporic development is called

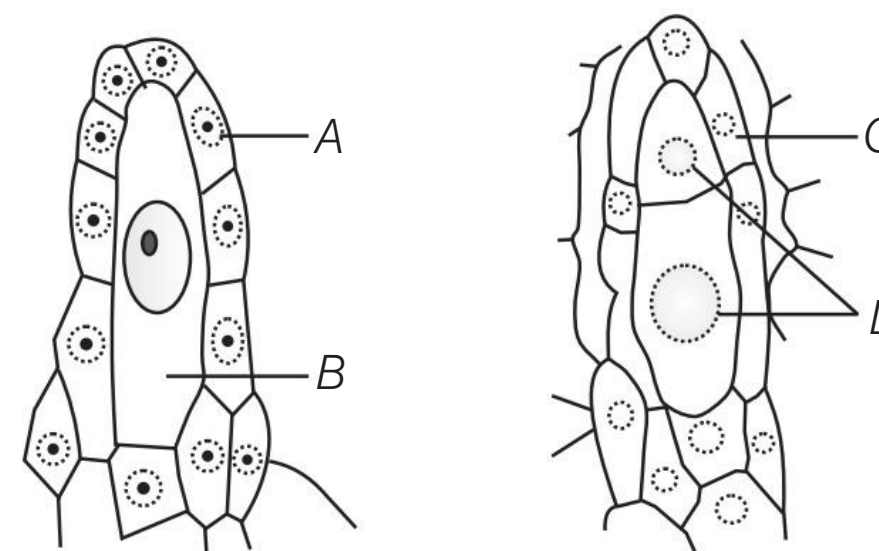
- (a) single sporic (b) unisporic
(c) monosporic (d) disporic

49 Identify *A* to *F* in the diagram given below.



- (a) A–Mitosis, B–Meiosis-I, C–Meiosis-II, D–Mitosis, E–Meiosis, F–Meiosis
(b) A–Meiosis-I, B–Meiosis-II, C–Mitosis, D–Mitosis, E–Mitosis, F–Embryo sac
(c) A–Embryo, B–Meiosis-I, C–Meiosis-II, D–Mitosis, E–Mitosis, F–Mitosis
(d) A–Mitosis, B–Mitosis, C–Mitosis, D–Meiosis, E–Meiosis, F–Meiosis

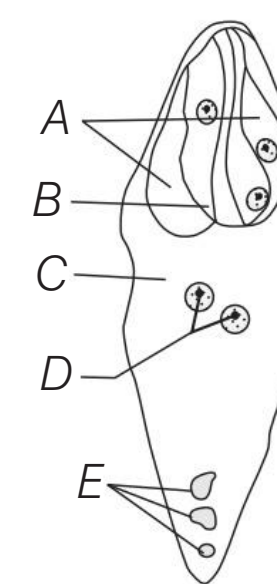
50 Identify the labelling of given diagrams.



- (a) A–MMC, B–Megaspore dyad, C–Nucellus, D–Nucleus
(b) A–Nucellus, B–Megaspore dyad, C–Nucellus, D–MMC
(c) A–Nucellus, B–MMC, C–Nucellus, D–Megaspore dyad
(d) A–MMC, B–Nucellus, C–Megaspore dyad, D–Nucleus

51 Identify *A* to *E* in the diagram given below.

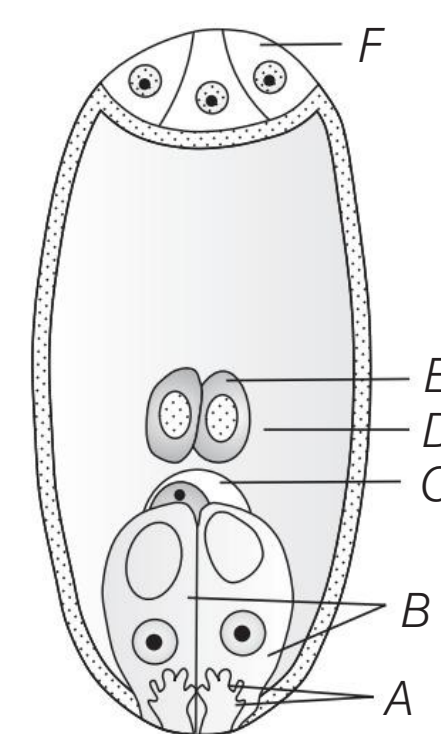
- (a) A–Antipodal, B–2 polar nuclei, C–Central cell, D–Egg, E–Synergids
(b) A–Antipodal, B–Central cell, C–2 polar nuclei, D–Egg, E–Synergids
(c) A–2 polar nuclei, B–Central cell, C–Antipodal cell, D–Egg, E–Synergids
(d) A–Synergids, B–Egg, C–Central cell, D–2 polar nuclei, E–Antipodal cell



52 In embryo sac, the number of synergid → egg cell → central cell → antipodal cell follows the order

- (a) 1–1–2–3 (b) 2–1–3–2
(c) 2–1–1–3 (d) 3–2–1–2

53 Identify *A* to *F* in the diagram given below.



- (a) A–Egg, B–Filiform apparatus, C–Synergid, D–Antipodals, E–Polar nuclei, F–Central cell
(b) A–Egg, B–Synergid, C–Filiform apparatus, D–Antipodals, E–Central cell, F–Polar nuclei
(c) A–Central cell, B–Egg, C–Synergid, D–Antipodals, E–Filiform apparatus, F–Polar nuclei
(d) A–Filiform apparatus, B–Synergid, C–Egg, D–Central cell, E–Polar nuclei, F–Antipodals

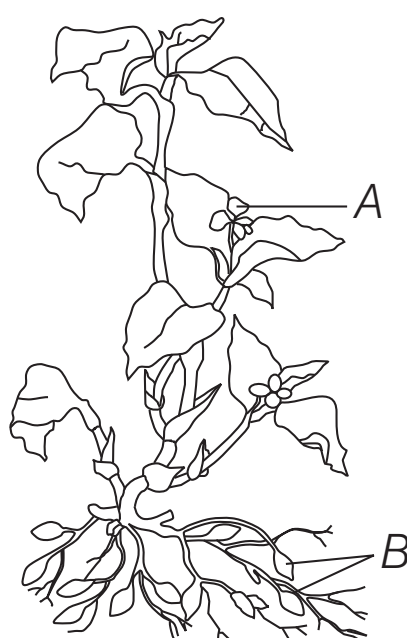
54 Filiform apparatus are

- (a) special cellular thickenings at antipodal cell
(b) special cellular thickenings at the micropylar end
(c) special cellular thickenings at synergid cells
(d) special cellular thickenings at nuclear end

- 55** Function of filiform apparatus is to
CBSE-AIPMT 2014, 08
(a) recognise the suitable pollen at stigma
(b) stimulate division of generative cell
(c) produce nectar
(d) guide the entry of pollen tube
- 56** How many nuclei are found in female gametophyte?
(a) 8 (b) 7 (c) 6 (d) 5
- 57** How many cells are found in female gametophyte?
(a) 6 (b) 8
(c) 7 (d) 5
- 58** Two nuclei within a single cell is
(a) antipodal cell (b) chalazal cell
(c) central cell (d) synergid cell

TOPIC 2 ~ Pollination

- 62** Autogamy stands for
(a) pollination in same flower
(b) pollination between different plants
(c) pollination in two flowers of same plant
(d) division in embryo
- 63** Cleistogamous flowers are strictly autogamous because they remain
(a) always open
(b) always close
(c) always fragrance
(d) are brightly coloured
- 64** Identify the type of flower A and B.
(a) A–Cleistogamous; B–Chasmogamous
(b) A–Homogamous; B–Heterogamous
(c) A–Chasmogamous; B–Cleistogamous
(d) A–Heterogamous; B–Homogamous



- 65** In chasmogamy pollination takes place in
(a) open flower
(b) closed flower
(c) large flower
(d) geitonogamy flower
- 66** Advantage of cleistogamy is
NEET 2013
(a) higher genetic variability
(b) more vigorous offspring
(c) no dependence on pollinators
(d) vivipary
- 67** Even in the absence of pollinating agents seed-setting is assured in
CBSE-AIPMT 2012
(a) *Commelina* (b) *Zostera*
(c) *Salvia* (d) Fig

- 59** Egg apparatus consists of
(a) 2 synergids + 2 eggs
(b) 2 synergids + 2 eggs
(c) 2 synergids + 1 egg
(d) 2 synergids + 4 eggs
- 60** In an embryo sac of anatropous ovule, cells present at chalazal end are called
(a) nucellar cells (b) synergids
(c) antipodal cells (d) None of these
- 61** In an angiospermic anatropous ovule, the embryo sac contains certain cells at the micropylar end. These are called
(a) synergids (b) antipodal cells
(c) nucellar cells (d) None of these

- 68** Geitonogamy involves
CBSE-AIPMT 2014, 10, 1994
(a) fertilisation of a flower by the pollen from another flower of the same plant
(b) fertilisation of a flower by the pollen from the same flower
(c) fertilisation of a flower by the pollen from a flower of another plant in the same population
(d) fertilisation of a flower by the pollen from a flower of another plant belonging to a distant population
- 69** Transfer of pollen grains from the anther to stigma of another flower of different plant is called
(a) geitonogamy (b) xenogamy
(c) chasmogamy (d) cleistogamy
- 70** The most common abiotic pollinating agency in flowering plant is/ are
(a) water (b) wind
(c) Both (a) and (b) (d) None of these
- 71** Characteristic of wind pollinated pollens is, they are
(a) non-sticky
(b) light
(c) produced in large number
(d) All of the above
- 72** The feathery long stigma is found in
(a) rice (b) maize (c) sugarcane (d) None of these
- 73** Flowers, which have single ovule in the ovary and are packed into inflorescence are usually pollinated by
NEET 2017
(a) water (b) bee (c) wind (d) bat
- 74** Wind pollination is common in
CBSE-AIPMT 2015, 14
(a) lilies (b) grasses (c) orchids (d) legumes
- 75** Pollination in water hyacinth and water lily is brought about by the agency of
NEET 2016
(a) water (b) insects or wind
(c) birds (d) bats

76 What type of pollination takes place in *Vallisneria*? **NEET 2019**

- (a) Pollination occurs in submerged condition by water
- (b) Flowers emerge above surface of water and pollination occurs by insects
- (c) Flowers emerge above water surface and pollen is carried by wind
- (d) Male flowers are carried by water currents to female flowers at the surface of water

77 Pollen grain of water pollinated plants are coated by covering to prevent it from wetting

- (a) mucilage
- (b) cuticle
- (c) exine
- (d) intine

78 Wind pollinated and water pollinated flowers

- (a) are colourful
- (b) are non-colourful
- (c) are small in size
- (d) produce nectar

79 Pollenkitt is present in **JIPMER 2018**

- (a) anemophily
- (b) entomophily
- (c) malacophily
- (d) zoophily

80 Attractants and rewards are required for **NEET 2017**

- (a) anemophily
- (b) entomophily
- (c) hydrophily
- (d) cleistogamy

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

- (a) Banana
- (b) *Yucca*
- (c) *Hydrilla*
- (d) *Viola*

82 Continued self-pollination results in

- (a) inbreeding depression
- (b) out breeding depression
- (c) hybrid vigour
- (d) better result in offspring

83 Device to discourage self-pollination or increase cross-pollination is

- (a) pollen release and stigma receptivity are not synchronised
- (b) anther and stigma placed at different position
- (c) same height of stamen and stigma
- (d) Both (a) and (b)

84 A dioecious flowering plant prevents both **NEET 2017**

- (a) autogamy and xenogamy
- (b) autogamy and geitonogamy
- (c) geitonogamy and xenogamy
- (d) cleistogamy and xenogamy

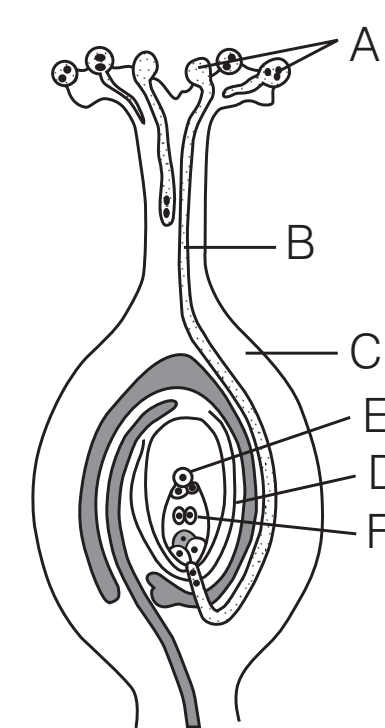
85 In which of the following, both autogamy and geitonogamy are prevented?

NEET (Odisha) 2019, CBSE-AIPMT 2012

- (a) Wheat
- (b) Papaya
- (c) Castor
- (d) Maize

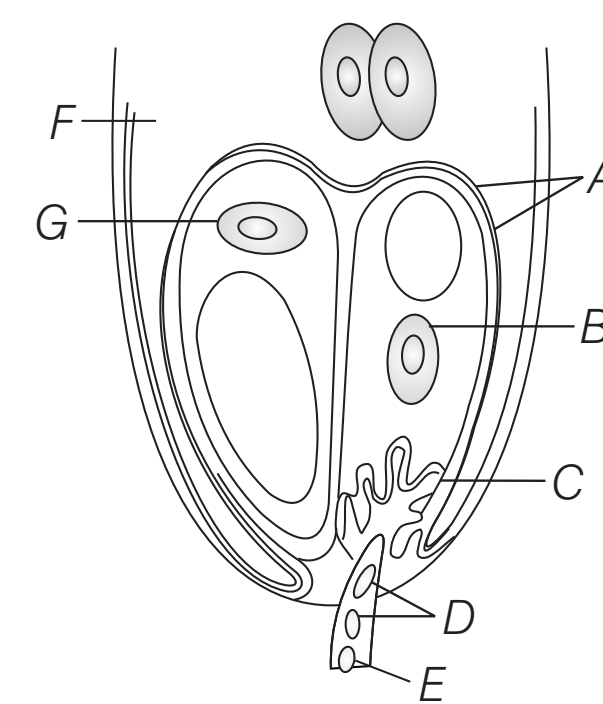
86 Identify A to F in the given diagram.

- (a) A–Pollen tube, B–Ovary, C–Ovule, D–Antipodal cell, E–Pollen grain, F–Polar nuclei
- (b) A–Polar nuclei, B–Antipodal cell, C–Ovule, D–Ovary, E–Pollen tube, F–Pollen grain
- (c) A–Pollen grain, B–Pollen tube, C–Ovary, D–Ovule, E–Antipodal cell, F–Polar nuclei
- (d) A–Antipodal cell, B–Ovule, C–Ovary, D–Polar nuclei, E–Pollen grain, F–Pollen tube

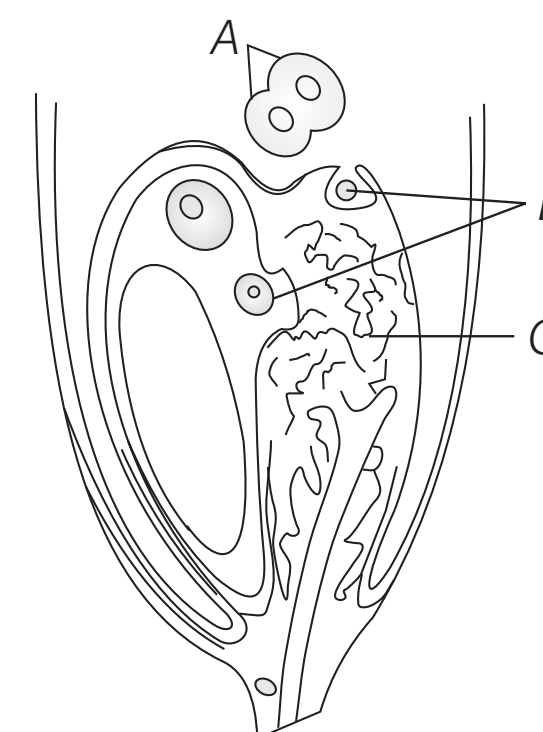


87 Diagram showing entry of pollen tube to the embryo sac. Identify A to G in the diagram.

- (a) A–Synergid, B–Filiform apparatus, C–Male gamete, D–Plasma membrane, E–Central cell, F–Egg nucleus, G–Vegetative nucleus
- (b) A–Filiform apparatus, B–Central cell, C–Egg nucleus, D–Vegetative nucleus, E–Male gamete, F–Synergid, G–Plasma membrane
- (c) A–Plasma membrane, B–Synergid, C–Filiform apparatus, D–Male gametes, E–Vegetative nucleus, F–Central cell, G–Egg nucleus
- (d) A–Central cell, B–Egg nucleus, C–Vegetative nucleus, D–Male gametes, E–Synergid, F–Plasma membrane, G–Filiform apparatus



88 Diagram showing discharge of gametes in the egg apparatus. Identify A, B and C.



- (a) A–Polar nuclei, B–Female gametes, C–Synergid cell
- (b) A–Male gametes, B–Synergid cell, C–Polar nuclei
- (c) A–Synergid cell, B–Male gametes, C–Polar nuclei
- (d) A–Polar nuclei, B–Male gametes, C–Synergid cell

89 Generally pollen tube enters through

- (a) micropylar region
- (b) antipodal region
- (c) chalazal end
- (d) nuclear region

90 The ability of the pistil to recognise the pollen followed by its acceptance or rejection is the result of a continuous dialogue between pollen grain and the pistil.

Which of the following chemicals mainly takes part in this interaction.

- (a) Nucleotides
- (b) Proteins
- (c) Minerals
- (d) Lipid or Inulin

91 The process of removal of anther from the flower bud before it dehisces is called as **AIIMS 2019**

- (a) emasculation
- (b) bagging
- (c) embryo rescue
- (d) budding

92 For artificial hybridisation experiment in bisexual flower, which of the sequence is correct?

- (a) Bagging → Emasculation → Cross-pollination → Rebagging
- (b) Emasculation → Bagging → Cross-pollination → Rebagging
- (c) Cross-pollination → Bagging → Emasculation → Rebagging
- (d) Self-pollination → Bagging → Emasculation → Rebagging

TOPIC 3 ~ Double Fertilisation and Development of Endosperm

93 Double fertilisation is

NEET 2018

- (a) fusion of two male gametes with one egg
- (b) fusion of one male gamete with two polar nuclei
- (c) fusion of two male gametes of pollen tube with two different eggs
- (d) syngamy and triple fusion

94 Double fertilisation is exhibited by

NEET 2017

- (a) gymnosperms
- (b) algae
- (c) fungi
- (d) angiosperms

95 I. Antipodal cell

II. Egg cell

III. Synergid cell

IV. Polar nuclei

V. Male gamete

VI. Nucellar cell

VII. Central cell

Out of the seven names given above, find out haploid cells.

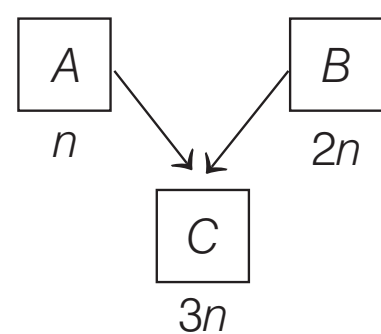
- (a) I, II, IV and V
- (b) II, IV, VI and VII
- (c) I, II, III and V
- (d) II, IV, III and I

96 What is the fate of the male gametes discharged in the synergid?

NEET 2019

- (a) All fuse with the egg
- (b) One fuses with the egg, other(s) fuse(s) with synergid nucleus
- (c) One fuses with the egg and other fuses with central cell nuclei
- (d) One fuses with the egg other(s) degenerate(s) in the synergid

97 Find out *A*, *B* and *C* in the flowchart given below.

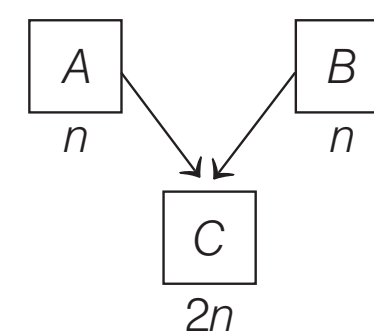


- (a) A–Female gamete, B–Male gamete, C–Endosperm
- (b) A–Endosperm, B–Female gamete, C–Male gamete

(c) A–Male gamete, B–Polar nuclei, C–Endosperm

(d) A–Female gamete, B–Endosperm, C–Male gamete

98 Find out *A*, *B* and *C* in the flowchart given below.



- (a) A–Embryo, B–Male gamete, C–Female gamete
- (b) A–Male gamete, B–Female gamete, C–Embryo
- (c) A–Female gamete, B–Embryo, C–Male gamete
- (d) A–Male gamete, B–Embryo, C–Female gamete

99 How many number of nuclei are involved in fertilisation?

- (a) 1
- (b) 1 + 1
- (c) 2 + 1
- (d) None of these

100 The total number of nuclei involved in triple fusion is/are

- (a) 2
- (b) 3
- (c) 4
- (d) 1

101 Syngamy and triple fusion is called ...*A*... . The central cell becomes ...*B*... develop into ...*C*... and zygote develops into ...*D*... .

A, *B*, *C* and *D* in the above statements are

- (a) A–fusion, B–haploid, C–diploid cell, D–embryo
- (b) A–double fertilisation, B–PEC, C–endosperm, D–embryo
- (c) A–embryo, B–endosperm, C–PEC, D–diploid cell
- (d) A–PEC, B–endosperm, C–syngamy, D–fertilisation

102 If stem has $2n = 10$ number of chromosomes then find out

A – number of chromosome in endosperm.

B – number of chromosome in egg cell.

C – number of chromosome in polar nuclei, respectively.

- (a) 15, 15, 20
- (b) 10, 15, 20
- (c) 15, 5, 10
- (d) 10, 5, 15

103 If endosperm has 36 number of chromosomes then find out the chromosome number of male and female gamete.

- (a) 18, 18 (b) 17, 18 (c) 20, 20 (d) 12, 12

104 PEC (Primary Endosperm Cell) is formed

- (a) after triple fusion (b) before triple fusion
(c) at the time of syngamy (d) always persisted

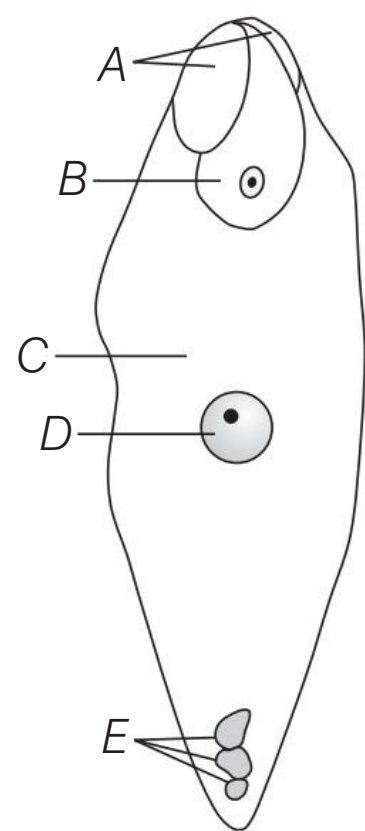
105 In an angiosperm, male plant is diploid and female plant is tetraploid then endosperm will be

- (a) haploid (b) triploid
(c) tetraploid (d) pentaploid

106 In angiosperm, pollen tube liberates their male gametes into the

- (a) central cell (b) antipodal cell
(c) egg cell (d) synergids

107 In the given fertilised embryo sac, identify *A* to *E*.



(a) A–Degenerating antipodal cell, B–Primary endosperm nucleus, C–Primary endosperm cell, D–Synergid cell, E–Zygote

(b) A–Synergid cell, B–Antipodal cell, C–Zygote, D–Endosperm cell, E–Chalazal cell

(c) A–Degenerating synergids, B–Zygote, C–Primary endosperm cell, D–Primary endosperm nucleus, E–Degenerating antipodal cell

(d) A–Zygote, B–Synergid, C–Primary endosperm cell, D–Primary endosperm nucleus, E–Degenerating antipodal cell

108 Out of the following choose the post-fertilisation event(s).

- (a) Endospermogenesis (b) Embryogenesis
(c) Both (a) and (b) (d) Megasporogenesis

109 The morphological nature of the edible part of coconut is **NEET 2017**

- (a) perisperm (b) cotyledon
(c) endosperm (d) pericarp

110 Coconut water from a tender coconut is

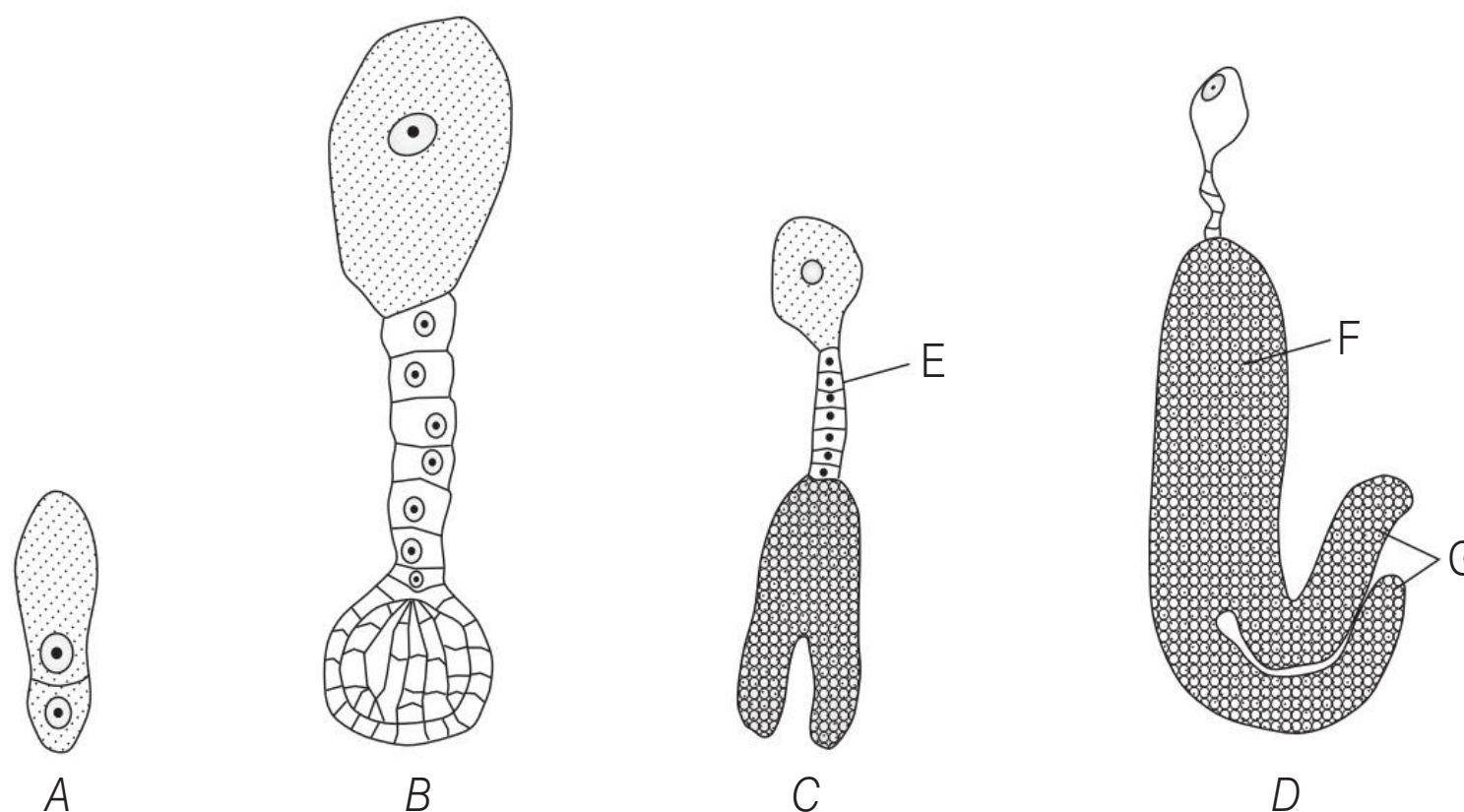
- (a) immature embryo **CBSE-AIPMT 2015**
(b) free-nuclear endosperm
(c) innermost layers of the seed coat
(d) degenerated nucellus

111 Endosperm is consumed by developing embryo in the seed of

- (a) pea (b) maize
(c) coconut (d) castor

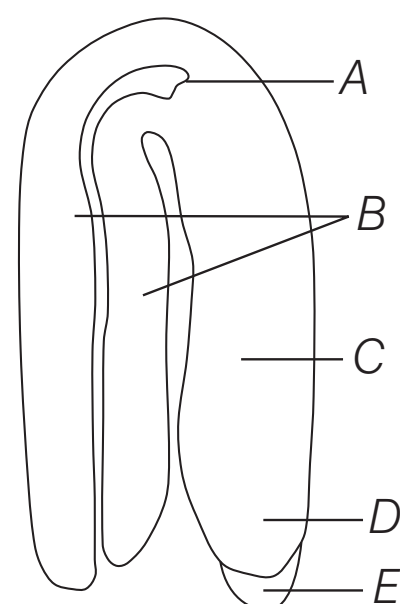
TOPIC 4~ Embryo, Seed and Fruit Formation

112 Identify the different stages in embryogenesis in the given diagram *A*, *B*, *C*, *D*, *E*, *F* and *G*.



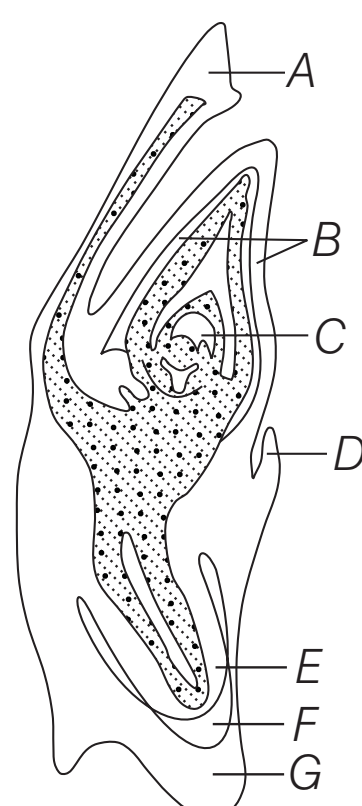
- (a) A–2-celled stage, B–Heart-shaped embryo, C–Globular embryo, D–Mature embryo, E–Radicle, F–Suspensor, G–Cotyledon
(b) A–2-celled stage, B–Mature embryo, C–Heart-shaped embryo, D–Globular embryo, E–Cotyledon, F–Radicle, G–Suspensor
(c) A–2-celled stage, B–Globular embryo, C–Heart-shaped embryo, D–Mature embryo, E–Suspensor, F–Radicle, G–Cotyledon
(d) A–Mature embryo, B–Heart-shaped embryo, C–Globular embryo, D–2-celled stage, E–Suspensor, F–Cotyledon, G–Radicle

- 113** Identify the *A* to *E* in the following diagram of typical dicot embryo.



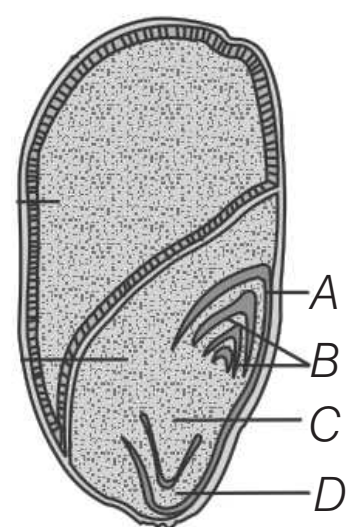
- (a) A–Cotyledons, B–Hypocotyl, C–Plumule, D–Root cap, E–Radicle
 (b) A–Radicle, B–Root cap, C–Plumule, D–Hypocotyl, E–Cotyledons
 (c) A–Hypocotyl, B–Cotyledons, C–Plumule, D–Radicle, E–Root cap
 (d) A–Plumule, B–Cotyledons, C–Hypocotyl, D–Radicle, E–Root cap

- 114** In figure given below, find out the type of seed and identify coleoptile, coleorhiza and epiblast.



- (a) Monocots–*A*, *B* and *C*
 (b) Dicots–*F*, *A* and *C*
 (c) Monocots–*B*, *G* and *D*
 (d) Dicots–*D*, *E* and *A*

- 115** Identify the parts labelled as *A* to *D* in structure of seed given below.



- (a) A–Coleoptile, B–Plumule, C–Radicle, D–Coleorhiza
 (b) A–Plumule, B–Coleoptile, C–Coleorhiza, D–Radicle
 (c) A–Coleorhiza, B–Radicle, C–Plumule, D–Coleoptile
 (d) A–Radicle, B–Plumule, C–Coleoptile, D–Coleorhiza

- 116** A typical dicotyledonous embryo consist of an ...*A*... axis and ...*B*... cotyledons.

The portion of embryonal axis above the level of cotyledons is ...*C*... which terminates with the ...*D*... or stem tip.

A, *B*, *C* and *D* in the above statement are

- (a) A–plumule, B–epicotyl, C–cotyledons, D–embryonal
 (b) A–embryonal, B–two, C–epicotyl, D–plumule
 (c) A–embryonal, B–epicotyl, C–cotyledons, D–plumule
 (d) A–embryonal, B–plumule, C–cotyledons, D–epicotyl

- 117** The cylindrical portion below the cotyledons is ...*A*... that terminates to ...*B*... and its tip is called ...*C*... . *A*, *B* and *C* here refers to

- (a) A–radicle, B–hypocotyl, C–root cap
 (b) A–root cap, B–radicle, C–hypocotyl
 (c) A–hypocotyl, B–root cap, C–radicle
 (d) A–hypocotyl, B–radicle, C–root cap

- 118** The wheat grain has an embryo with one large, shield-shaped cotyledon known as **CBSE-AIPMT 2015**

- (a) epiblast (b) coleorhiza
 (c) scutellum (d) coleoptile

- 119** Number of seeds are equal to the

- (a) number of ovules (b) number of ovaries
 (c) Both (a) and (b) (d) None of these

- 120** Persistent nucellus in the seed is known as **NEET 2019**

- (a) perisperm (b) hilum (c) tegmen (d) chalaza

- 121** Which is most crucial for seed storage?

- (a) Dehydration and dormancy
 (b) Endosperm and water
 (c) Least amount of development
 (d) Endosperm in large quantity

- 122** True fruit is directly derived from

- (a) stem (b) root
 (c) ovary (d) None of these

- 123** False fruit is a fruit in which

- (a) only ovary take part in fruit development
 (b) only embryo take part in fruit development
 (c) only chalazal cells take part in fruit development
 (d) ovary and other floral part are included in fruit development

- 124** Thalamus contributes in the fruit formation in

- (a) apple (b) strawberry
 (c) cashewnut (d) All of these

- 125** The world's oldest viable seed, excavated from Arctic Tundra is of

- (a) lupine (b) *Ficus* (c) date palm (d) *Phoenix*

- 126** Viability of date palm (*Phoenix dactylifera*) seed is

- (a) 2000 yrs (b) 1000 yrs
 (c) 500 yrs (d) 100 yrs

TOPIC 5 ~ Apomixis and Polyembryony

- 127** Seed formation without fertilisation in flowering plants involves the process of **NEET 2016**
(a) budding (b) somatic hybridisation
(c) apomixis (d) sporulation
- 128** Type of cell division takes place in apomixis is
(a) reductional (b) meiosis
(c) Both (a) and (b) (d) mitosis
- 129** Ovules contain many embryo in
(a) *Citrus* (b) apple
(c) mango (d) Both (a) and (c)
- 130** Occurrence of more than one embryo is called
(a) polyembryony (b) embryony
(c) parthenogenesis (d) fertilisation
- 131** Vegetative/Asexual reproduction and apomixis are common to each other in
(a) type of cell division
(b) clone nature of offspring
(c) Both (a) and (b)
(d) only in dicot plant
- 132** Nucellar polyembryony is reported in
(a) *Gossypium* (b) *Triticum*
(c) *Brassica* (d) *Citrus*
- 133** Apomictic embryos in *Citrus* arise from
(a) synergids
(b) maternal sporophytic tissue in ovule
(c) antipodal cell
(d) haploid egg

NEET

SPECIAL TYPES QUESTIONS

I. Assertion and Reason

■ **Direction** (Q. No. 134-148) In each of the following questions, a statement of Assertion (A) is given followed by corresponding statement of Reason (R). Of the statements, mark the correct answer as

- (a) If both A and R are true and R is correct explanation of A
(b) If both A and R are true, but R is not the correct explanation of A
(c) If A is true, but R is false
(d) If A is false, but R is true
- 134 Assertion** (A) Gynoecium consists of pistil.
Reason (R) It represents the male reproductive part in flowering plants.
- 135 Assertion** (A) Meiosis is the cell division which occurs in the sexually reproducing organisms.
Reason (R) Meiotic cell division results into two cells having exactly same genetic makeup.
- 136 Assertion** (A) Flowers are the structures related to sexual reproduction in flowering plants.
Reason (R) Various embryological processes of plants occur in a flower.
- 137 Assertion** (A) Megaspore mother cell undergoes meiosis to produce four megaspores.
Reason (R) Megaspore mother cell and megaspore both are haploid.
- 138 Assertion** (A) Pollen grain of angiosperm is considered as the male gametophyte.
Reason (R) Pollen grain contains stigma, style and ovary.
- 139 Assertion** (A) Geitonogamy is genetically similar to autogamy.
Reason (R) In geitonogamy, pollen grains come from the same plant.
- 140 Assertion** (A) Cleistogamous flowers produce assured seed set in the absence of pollinators.
Reason (R) Cleistogamous flowers do not open at all.
- 141 Assertion** (A) Removal of anthers is first step in artificial hybridisation.
Reason (R) It prevents contamination of anthers.
- 142 Assertion** (A) Endosperm development precedes embryo development.
Reason (R) It assures nutrition to the developing embryo.
- 143 Assertion** (A) Non-albuminous seeds have no residual endosperm.
Reason (R) The endosperm is completely consumed during embryo development.
- 144 Assertion** (A) Mango is a false fruit.
Reason (R) The thalamus also contributes to fruit formation in false fruits.

145 Assertion (A) Some fruits are seedless or contain non-viable seeds.

Reason (R) They are produced without fertilisation.

146 Assertion (A) In apomixis, plants of new genetic variations are not produced.

Reason (R) In apomixis, reductional division takes place.

147 Assertion Parthenocarpy involves the formation of seedless fruits. **AIIMS 2019**

Reason Apomixis occurs without fertilisation.

148 Assertion In apomixis, the plants of new genetic sequence are produced. **AIIMS 2019**

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

II. Statement Based Questions

149 Read the following statements and choose the correct ones.

- I. Non-essential floral organs in a flower are sepals and petals.
- II. Stamens represent microsporophylls.
- III. A dithecious anther consists of four microsporangia two in each lobe.
- IV. The anther wall has middle layer lying between endothecium and tapetum.

- (a) I and II (b) II and III
(c) III and IV (d) I, II, III and IV

150 Which one of the following statement is correct?

- (a) Hard outer layer of pollen is called intine **NEET 2013**
(b) Sporogenous tissue is haploid
(c) Endothecium produces the microspores
(d) Tapetum nourishes the developing pollen

151 Self-incompatibility is a device for

- I. ensuring cross-pollination.
- II. preventing self-fertilisation.
- III. ensuring self-fertilisation.
- IV. genetic control for self-fertilisation.

Choose the correct statements from those given above.

- (a) I, II and III (b) I, II, III and IV
(c) I, III and IV (d) I, II and IV

152 Which of the following statement(s) is/are correct?

- I. The stigma serves as a landing platform for pollen grains.
- II. Ovarian cavity is also known as ovarian locule and is present inside the ovary.
- III. Placenta is located inside the ovarian cavity.
- IV. The ovule is attached to the placenta by funicle.

- (a) I, II and III (b) I, II and IV
(c) I and III (d) I, II, III and IV

153 Read the following statements.

- I. Generative cell is bigger and contains abundant food reserve.
- II. Vegetative cell is small and floats in the cytoplasm of the generative cell.
- III. In angiosperms various stages of reductional divisions can be studied in young anthers.
- IV. Hilum represents the junctions between ovule and funicle.

Choose the option with correct set of statements.

- (a) I and II (b) I and III
(c) II and IV (d) III and IV

154 Read the following statements and choose the correct statements.

- I. Heterostyly as a contrivance for cross-pollination is found in *Primula vulgaris*.
- II. Cleistogamous flower is present in *Commelina*.
- III. Tallest flower are of *Amorphophallus*.
- IV. In monoecious condition, both male and female flowers are borne on same plant, an example of such plant is *Cucurbita*.

- (a) I and II
(b) II and III
(c) III and IV
(d) I, II, III and IV

155 Read the following statements and choose the correct ones.

- I. Mature ovules in which micropyle comes to lie close to the funiculus the ovule is anatropous.
- II. When micropyle, chalaza and hilum lie in a straight line the ovule is said to be orthotropous.
- III. Megasporangium along with its protective integument is called ovule.

- (a) I and II (b) II and III
(c) I and III (d) I, II and III

156 Consider the following statements.

- I. Pollination by bats is known as chiropterophily.
- II. Pollination by ants is known as ornithophily.

- (a) Both statements I and II are true
(b) Statement I is true, but II is false
(c) Statement I is false, but II is true
(d) Both statements I and II are false

157 Which one of the following statement is incorrect about pollination?

- (a) Anemophily is by wind and occurs in grasses and date palm
(b) Hydrophily is by water and occurs in *Zostera*, *Vallisneria* and *Ceratophyllum*
(c) Entomophily is by insects and occurs in rose, jasmine, *Salvia*, etc.
(d) Ornithophily is by birds and occurs in *Adansonia*

158 Which of the following statement(s) is/are correct about *Parthenium* (carrot grass)?

- (a) *Parthenium* came into India as a contaminant with imported wheat
- (b) It has become ubiquitous in occurrence
- (c) It causes pollen allergy
- (d) All of the above

159 Choose the incorrect statement from the following.

- (a) Long ribbon-like pollen grains are seen in some aquatic plants
- (b) In some insect species, the floral reward for pollination is the safe place to lay eggs in the flower
- (c) Insect robbers consume pollens or nectar without bringing about pollination
- (d) Majority of the flowering plants produce homosexual flowers

160 Refer to the given characteristics of some flowers :

- I. Flowers are small. They are often packed in inflorescence.
- II. Flowers are colourless, nectarless and odourless
- III. Well exposed stamens.
- IV. Pollen grains produced in large number, light and non-sticky.
- V. Flowers often have a single ovule in each ovary.
- VI. Stigma-large, often feathery.

The above features are the characteristics of

- (a) Self-pollination
- (b) Anemophily (pollination by wind)
- (c) Ornithophily (pollination by birds)
- (d) Entomophily (pollination by insects)

161 The events in pollen-pistil interaction are given below.

- I. Pollen grain germinates to form pollen tube.
- II. Pollen tube enters the ovule through micropyle.
- III. Pollen grain reaches the stigma.
- IV. Pollen tube grows through the tissues of stigma and style and reaches the ovary.

The sequential order of their occurrence is

- (a) III → I → IV → II
- (b) II → IV → III → I
- (c) III → IV → II → I
- (d) II → III → I → IV

162 Which of the following statement is correct?

- (a) Pollination gives the guarantee of the promotion of post-pollination events that lead to fertilisation
- (b) The events 'from pollen deposition on stigma until pollen tubes enter the ovule' are together referred to as pollen-pistil interaction
- (c) Pollen-pistil interaction is a dynamic process involving pollen recognition followed by only promotion (not rejection) of the pollen
- (d) Pistil has no ability to recognise the pollen, whether right or wrong type

163 Study the following and find correct statement(s).

- I. Pollination by water is quite rare in flowering plants and is limited to about 50 genera, mostly monocotyledons.
 - II. Water is a regular mode of transport for the male gametes among higher plant groups.
 - III. Distribution of bryophytes and pteridophytes are limited because of the need of water for transport of male gametes and fertilisation.
- (a) Only I (b) II and III
(c) Only III (d) Only II

164 Read the following statements.

- I. Double fertilisation was discovered by Nawaschin in *Lilium* and *Fritillaria*.
- II. The total number of nuclei involved in double fertilisation is five.
- III. The central cell of embryo sac, as a result of triple fusion becomes primary endosperm cell (PEC).
- IV. Synergids are haploid.

Choose the correct set of statements.

- (a) I, II and III
- (b) II and IV
- (c) I, III and IV
- (d) I, II, III and IV

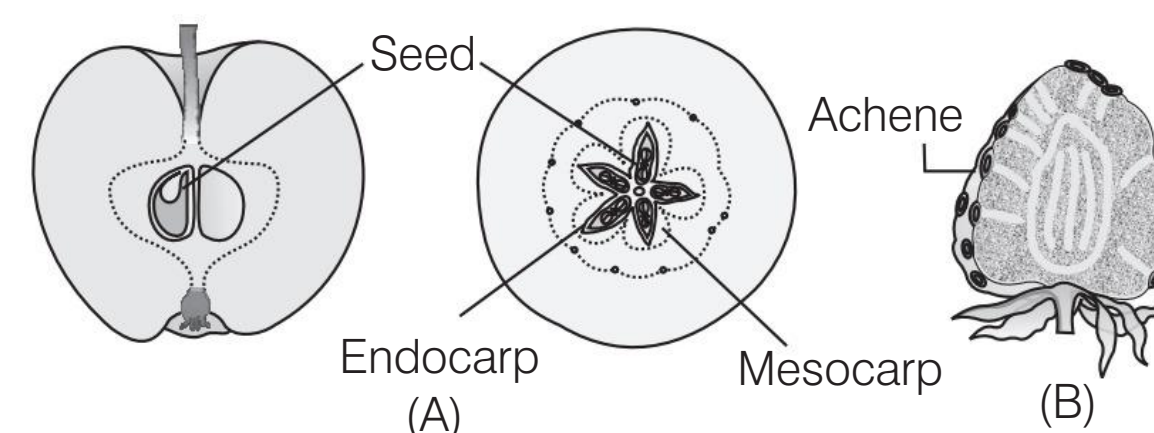
165 Find out the correct statement(s).

- I. Most common endosperm is of nuclear type.
 - II. Coconut water is male gametophyte.
 - III. Coconut has both free-nuclear and cellular type of endosperm.
- (a) I, II and III (b) I and III
(c) II and III (d) I and II

166 Find out the correct statement(s).

- I. Endosperm formation is the prior event than embryo formation.
 - II. Angiospermic and gymnospermic endosperm are $3n$ and n , respectively.
 - III. Endospermic seeds are found in castor, barley and coconut.
 - IV. In albuminous seed, food is stored in endosperm and in non-albuminous seeds, it is stored in cotyledons.
- (a) I and IV (b) II and III
(c) I and III (d) I, II, III and IV

167 Observe the following diagrams.



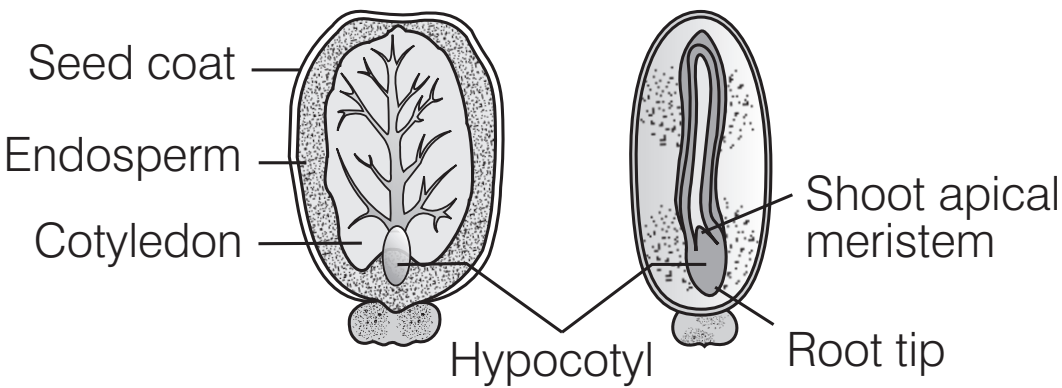
A. Fruit of apple

B. Fruit of strawberry

Select correct statement regarding the above fruits.

- (a) Both are parthenocarpic fruits which develops without fertilisation
- (b) Both are true fruits which develops only from the ovary
- (c) Both are false fruits in which thalamus also contributes to fruit formation
- (d) A is false fruit and B is true fruit

168 The given diagram is related to castor seeds. Select the incorrect statement regarding the labelled parts.



- (a) Seed coat protect the seed from physical, temperature or water damage
- (b) Endosperm provides nourishment to the developing embryo
- (c) Castor seed has single cotyledon, i.e. monocotyledonous and is albuminous
- (d) Hypocotyl terminates at its lower end in the root tip

III. Matching Type Questions

169 Match the following columns.

Column I	Column II
A. Outer integuments	1. Testa
B. Inner integuments	2. Tegmen
C. Ovary	3. Fruit
D. Ovules	4. Seed

Codes

A	B	C	D	A	B	C	D
(a) 1	3	2	4	(b) 3	4	1	2
(c) 1	2	3	4	(d) 4	3	2	1

170 Match the following columns.

Column I (Ovary)	Column II (Pistil)
A. Monocarpellary	1. Free pistil
B. Multicarpellary	2. Fused pistil
C. Syncarpous	3. Many pistil
D. Apocarpous	4. Single pistil

Codes

A	B	C	D
(a) 1	2	3	4
(b) 4	3	2	1
(c) 3	4	2	1
(d) 4	3	1	2

171 Match the following columns.

Column I	Column II
A. Antipodal	1. $3n$
B. Central cell	2. $2n$
C. MMC	3. $(n + n)$
D. Endosperm	4. n

Codes

A	B	C	D	A	B	C	D
(a) 4	3	1	2	(b) 3	2	1	4
(c) 4	3	2	1	(d) 3	4	1	2

172 Match the following columns.

Column I (Seeds / Fruits)	Column II (Examples)
A. Endospermic seed	1. Wheat
B. Non-endospermic seed	2. Mango
C. True fruit	3. Cashew
D. False fruit	4. Pea

Codes

A	B	C	D	A	B	C	D
(a) 4	2	3	1	(b) 1	4	2	3
(c) 1	3	2	4	(d) 4	3	2	1

173 Match the following columns.

Column I (Agents of pollination)	Column II (Technical term)
A. Wind	1. Anemophily
B. Water	2. Hydrophily
C. Insects	3. Entomophily
D. Birds	4. Ornithophily

Codes

A	B	C	D	A	B	C	D
(a) 1	2	3	4	(b) 1	3	2	4
(c) 4	2	3	1	(d) 2	3	4	1

174 Match the following columns.

Column I (Parts of seed)	Column II (Features)
A. Cotyledon	1. Portion below the cotyledon
B. Epicotyl	2. Portion above the cotyledon
C. Plumule	3. Stem tip
D. Hypocotyl	4. Leaf of embryo

Codes

A	B	C	D	A	B	C	D
(a) 1	2	3	4	(b) 1	3	2	4
(c) 4	2	3	1	(d) 1	2	4	3

175 Match the following columns.

Column I (Other modes of reproduction)	Column II (Examples)
A. Parthenocarpy	1. Grasses
B. Apomixis	2. Citrus
C. Polyembryony	3. Banana

Codes

A	B	C	A	B	C
(a) 1	2	3	(b) 2	1	3
(c) 3	2	1	(d) 3	1	2

176 Match the following columns.

Column I	Column II
A. Viability of pollen grains	1. Genetically different pollen grains
B. Autogamy	2. Prevailing temperature and humidity
C. Pollen allergy	3. Genetically similar pollen grains
D. Xenogamy	4. Carrot grass

Codes

A	B	C	D
(a) 2	3	4	1
(b) 1	2	3	4
(c) 3	2	4	1
(d) 4	3	2	1

177 Match the following columns.

Column I	Column II
A. Ovary	1. Groundnut, mustard
B. Ovule	2. Guava, orange, mango
C. Wall of fruit	3. Pericarp
D. Fleshy fruits	4. Seed
E. Dry fruits	5. Fruit

Codes

A	B	C	D	E
(a) 5	4	3	2	1
(b) 1	2	3	4	5
(c) 1	3	2	4	5
(d) 5	4	1	2	3

NCERT & NCERT Exemplar

MULTIPLE CHOICE QUESTIONS

NCERT

- 178** What is the correct sequence of development of microsporogenesis?
- (a) Pollen grain → Sporogenous tissue → Microspore tetrad → PMC → Male gametes
- (b) Sporogenous tissue → Microspore tetrad → PMC → Male gametes
- (c) Pollen grain → Male gametes → PMC → Microspore tetrad – Sporogenous tissue
- (d) Sporogenous tissue → PMC → Microspore tetrad → Pollen grain → Male gametes
- 179** Strategies to prevent self-pollination are
- (a) dioecy (b) self-incompatibility
- (c) Both (a) and (b) (d) None of these
- 180** The portion of embryonal axis above the level of cotyledons is
- (a) epicotyl (b) hypocotyl (c) plumule (d) radicle
- 181** Perisperm is
- (a) residual nucellus (b) residual endosperm
- (c) covering of fruit (d) None of these
- 182** Name the part of gynoecium that determines the compatible nature of pollen grain.
- (a) Pistil (b) Ovary
- (c) Ovum (d) Ovule

- 183** Which type of pollination occurs in self-incompatible plant?
- (a) Self-pollination (b) Cross-pollination
- (c) Water pollination (d) Wind pollination

NCERT Exemplar

- 184** In a typical complete, bisexual and hypogynous flower the arrangement of floral whorls on the thalamus from the outermost to the innermost is
- (a) calyx, corolla, androecium and gynoecium
- (b) calyx, corolla, gynoecium and androecium
- (c) gynoecium, androecium, corolla and calyx
- (d) androecium, gynoecium, corolla and calyx
- 185** Among the terms listed below, those that are not technically correct names for a floral whorl are
- I. androecium II. carpel
- III. corolla IV. sepal
- (a) I and IV (b) III and IV
- (c) II and IV (d) I and II
- 186** Embryo sac is to ovule as is to an anther.
- (a) stamen
- (b) filament
- (c) pollen grain
- (d) androecium

- 187** A dicotyledonous plant bears flowers, but never produces fruits and seeds. The most probable cause for the above situation is
 (a) plant is dioecious and bears only pistillate flowers
 (b) plant is dioecious and bears both pistillate and staminate flowers
 (c) plant is monoecious
 (d) plant is dioecious and bears only staminate flowers
- 188** During microsporogenesis, meiosis occurs in
 (a) endothecium
 (b) microspore mother cells
 (c) microspore tetrads
 (d) pollen grains
- 189** From among the sets of terms given below, identify those that are associated with the gynoecium.
 (a) Stigma, ovule, embryo sac, placenta
 (b) Thalamus, pistil, style, ovule
 (c) Ovule, ovary, embryo sac, tapetum
 (d) Ovule, stamen, ovary, embryo sac
- 190** Starting from the innermost part, the correct sequence of parts in an ovule are
 (a) egg, nucellus, embryo sac, integument
 (b) egg, embryo sac, nucellus, integument
 (c) embryo sac, nucellus, integument, egg
 (d) egg, integument, embryo sac, nucellus
- 191** From the statements given below choose the option that are true for a typical female gametophyte.
 I. It is 8-nucleate and 7-celled at maturity.
 II. It is free-nuclear during the development.
 III. It is situated inside the integument, but outside the nucellus.
 IV. It has an egg apparatus situated at the chalazal end.
 (a) I and IV (b) II and III
 (c) I and II (d) II and IV
- 192** Autogamy can occur in a chasmogamous flower if
 (a) pollen matures before maturity of ovule
 (b) ovules mature before maturity of pollen
 (c) Both pollen and ovules mature simultaneously
 (d) Both anther and stigma are of equal lengths
- 193** Choose the correct statement from the following.
 (a) Cleistogamous flowers always exhibit autogamy
 (b) Chasmogamous flowers always exhibit geitonogamy
 (c) Cleistogamous flowers exhibit both autogamy and geitonogamy
 (d) Chasmogamous flowers never exhibit autogamy
- 194** From among the situations given below, choose the one that prevents both autogamy and geitonogamy.
 (a) Monoecious plant bearing unisexual flowers
 (b) Dioecious plant bearing only male or female flowers
 (c) Monoecious plant with bisexual flowers
 (d) Dioecious plant with bisexual flowers
- 195** In an embryo sac, the cells that degenerate after fertilisation are
 (a) synergids and primary endosperm cell
 (b) synergids and antipodals
 (c) antipodals and primary endosperm cell
 (d) egg and antipodals
- 196** While planning for an artificial hybridisation programme involving dioecious plants, which of the following steps would not be relevant?
 (a) Bagging of female flower
 (b) Dusting of pollen on stigma
 (c) Emasculation
 (d) Collection of pollen
- 197** In the embryos of a typical dicot and a grass, true homologous structures are
 (a) coleorhiza and coleoptile (b) coleoptile and scutellum
 (c) cotyledons and scutellum (d) hypocotyl and radicle
- 198** The phenomenon observed in some plants where in parts of the sexual apparatus is used for forming embryos without fertilisation is called
 (a) parthenocarpy (b) apomixis
 (c) vegetative propagation (d) sexual reproduction
- 199** In a flower, if the megaspore mother cell forms megaspores without undergoing meiosis and if one of the megaspores develops into an embryo sac, its nuclei would be
 (a) haploid
 (b) diploid
 (c) a few haploid and a few diploid
 (d) with varying ploidy
- 200** The phenomenon wherein, the ovary develops into a fruit without fertilisation is called
 (a) parthenocarpy (b) apomixis
 (c) asexual reproduction (d) sexual reproduction
- 201** In a fertilised embryo sac, the haploid, diploid and triploid structures are
 (a) synergid, zygote and primary endosperm nucleus
 (b) synergid, antipodal and polar nuclei
 (c) antipodal, synergid and primary endosperm nucleus
 (d) synergid, polar nuclei and zygote
- 202** The outermost and innermost wall layers of microsporangium in an anther are respectively.
 (a) Endothecium and tapetum
 (b) Epidermis and endodermis
 (c) Epidermis and middle layer
 (d) Epidermis and tapetum
- 203** A particular species of plant produces light, non-sticky pollen in large numbers and its stigmas are long and feathery. These modifications facilitate pollination by
 (a) insects (b) water (c) wind (d) animals

Answers

› **Mastering NCERT with MCQs**

1 (c) 2 (a) 3 (d) 4 (c) 5 (b) 6 (d) 7 (d) 8 (d) 9 (a) 10 (a) 11 (d) 12 (d) 13 (c) 14 (d) 15 (b)
16 (b) 17 (b) 18 (c) 19 (a) 20 (a) 21 (c) 22 (d) 23 (d) 24 (c) 25 (c) 26 (d) 27 (b) 28 (a) 29 (a) 30 (c)
31 (a) 32 (b) 33 (b) 34 (d) 35 (c) 36 (a) 37 (a) 38 (c) 39 (a) 40 (a) 41 (c) 42 (c) 43 (a) 44 (c) 45 (c)
46 (c) 47 (b) 48 (c) 49 (b) 50 (c) 51 (d) 52 (c) 53 (d) 54 (c) 55 (d) 56 (a) 57 (c) 58 (c) 59 (c) 60 (c)
61 (a) 62 (a) 63 (b) 64 (c) 65 (a) 66 (c) 67 (a) 68 (a) 69 (b) 70 (b) 71 (d) 72 (b) 73 (c) 74 (b) 75 (b)
76 (d) 77 (a) 78 (b) 79 (b) 80 (b) 81 (b) 82 (a) 83 (d) 84 (b) 85 (b) 86 (c) 87 (c) 88 (d) 89 (a) 90 (b)
91 (a) 92 (b) 93 (d) 94 (d) 95 (c) 96 (c) 97 (c) 98 (b) 99 (b) 100 (b) 101 (b) 102 (c) 103 (d) 104 (a) 105 (d)
106 (d) 107 (c) 108 (c) 109 (c) 110 (b) 111 (a) 112 (c) 113 (d) 114 (c) 115 (a) 116 (b) 117 (d) 118 (c) 119 (a) 120 (a)
121 (a) 122 (c) 123 (d) 124 (d) 125 (a) 126 (a) 127 (c) 128 (d) 129 (d) 130 (a) 131 (c) 132 (d) 133 (b)

› **NEET Special Types Questions**

134 (c) 135 (c) 136 (a) 137 (c) 138 (c) 139 (a) 140 (a) 141 (c) 142 (a) 143 (a) 144 (d) 145 (a) 146 (c) 147 (b) 148 (d)
149 (d) 150 (d) 151 (d) 152 (d) 153 (d) 154 (d) 155 (d) 156 (b) 157 (d) 158 (d) 159 (d) 160 (b) 161 (a) 162 (b) 163 (c)
164 (d) 165 (b) 166 (d) 167 (c) 168 (c) 169 (c) 170 (b) 171 (c) 172 (b) 173 (a) 174 (c) 175 (d) 176 (a) 177 (a)

› **NCERT & NCERT Exemplar Questions**

178 (d) 179 (c) 180 (a) 181 (a) 182 (a) 183 (b) 184 (a) 185 (c) 186 (c) 187 (d) 188 (b) 189 (a) 190 (b) 191 (c) 192 (c)
193 (a) 194 (b) 195 (b) 196 (c) 197 (c) 198 (b) 199 (b) 200 (a) 201 (a) 202 (d) 203 (c)