

Sexual Reproduction in Flowering Plants

1. Among the following, choose the terms that are technically does not indicate floral whorl

- I. Sepal II. Corolla III. Androecium IV. Carpel
 a) I, II b) III, IV c) II, III *d) I, IV

2. Embryosac is to ovule, ----- is to anther

- a) Male gamete b) Vegetative cell
 *c) Microspore d) Microspore mother cell

3. Match the following with respect to Microsporangium of angiosperms

List – I	List – II
A) Does not provide protection	I) Middle layers
B) Has stomium	II) Tapetum
C) Has hygroscopic nature	III) Sporogenous cells
D) More than one layered	IV) Endothecium
	V) Epidermis

- A B C D
 *a) II V IV I
 b) III V IV I
 c) II V III IV
 d) II IV I V

4. [A]: Microspores or pollen grains are safely deposited in the fossils

[R]: Pollen grains have sporopollenin in their intine

- a) Both A and R are true and R is the correct explanation of A
 b) Both A and R are true but R is not the correct explanation of A
 *c) A is true but R is false d) A and R are false

5. 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, Gynoecium, Androecium *b) Calyx, Corolla, Androecium, Gynoecium
 c) Corolla, Calyx, Androecium, Gynoecium d) Calyx, Androecium, Gynoecium, Corolla

6. The most probable cause for the situation in which a dicotyledonous plant does not produce fruits and seeds is

- a) Plant is dioecious and produces only pistillate flowers
 b) Plant is dioecious and produces staminate and pistillate flowers
 *c) Plant is dioecious and has staminate flowers
 d) Plant has bisexual flowers.

7. Match the following

List – I	List – II
A) Monothealous anthers	I) <i>Parthenium</i>
B) Apocarpous pistil	II) <i>Papaver</i>
C) Styleless pistil	II) <i>Michelia</i>
D) Allergic pollen	I) <i>Hibiscus</i>
	V) <i>Datura</i>

- A B C D
 a) IV V I II
 b) III I IV II
 *c) IV III II I
 d) V III II I

8. [A]: Developed male gametophyte of angiosperm has 3 cells
 [R]: In all angiosperms the male gametophyte has only two male gametes.
 a) Both A and R are true and R is the correct explanation of A
 *b) Both A and R are true but R is not the correct explanation of A
 c) A is true but R is false
 d) A and R are false
9. The outermost and innermost layers of anther wall are respectively
 a) Epidermis, Endothecium
 b) Middle layers, Endothecium
 c) Tapetum, Epidermis
 *d) Epidermis, Tapetum
10. Starting from innermost part of ovule, the correct sequence of parts in a developed ovule is
 a) egg, nucellus, embryo sac, integument
 b) nucellus, egg, embryo sac, integument
 *c) egg, embryo sac, nucellus, integument
 d) nucellus, embryo sac, egg, integument

11. Match the following

List – I	List – II
A) Irregularly shaped nucleus	I) Pollen tube wall
B) Spindle shaped cell	II) Exine
C) Most resistant biological material	III) Vegetative cell
D) Cellulose and pectin	IV) Generative cell
	V) Central cell

- | | A | B | C | D |
|-----|-----|-----|-----|-----|
| a) | V | IV | II | III |
| b) | IV | III | II | I |
| *c) | III | IV | II | I |
| d) | IV | V | III | II |

12. [A]: Pollen of paddy can germinate even after two days
 [R]: Microspores of some plants have viability of few months
 a) Both A and R are true and R is the correct explanation of A
 b) Both A and R are true but R is not the correct explanation of A
 c) A is true but R is false
 *d) A and R are false
13. These cells of angiosperms are involved in meiosis
 *a) Cells that give rise microspores
 b) Cells that give rise polar nuclei
 c) cell involved in the formation of male gametes
 d) Cell in which diploid secondary nucleus is present
14. From the below statements, choose the options that are true for a typical female gametophyte of flowering plant.
 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, III
 *c) I and II
 d) II, IV

15. Match the following

List – I	List – II
A) Ategmic ovule	I) Monocots
B) Unitegmic ovule	II) Annona
C) Apocarpous gynoecium	III) Datura
D) Bitegmic ovules	IV) Loranthus
	V) Pteris

- | | A | B | C | D |
|-----|----|-----|----|-----|
| *a) | IV | III | II | I |
| b) | V | III | II | I |
| c) | IV | I | II | III |
| d) | IV | III | V | II |

16. [A]: Endothecium of anther wall helps in dehiscence of anther

[R]: It has Stomium

- a) Both A and R are true and R is the correct explanation of A
 b) Both A and R are true but R is not the correct explanation of A
 *c) A is true but R is false
 d) A and R are false

17. Autogamy can occur in a chasmogamous flower if

- a) pollen matures before the maturity of ovule
 b) Ovules mature before the maturity of pollen.
 *c) both pollen and ovule maturity is synchronous
 d) Both anther and stigma and anther of same length.

18. 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

19. Match the following

List – I	List – II
A) Generative cell	I) Largest cell of embryosac
B) Male gametes	II) Fertile cell of embryosac
C) Egg cell	III) 3-celled pollen grain
D) Central cell	IV) 2- celled pollen grain
	V) Vegetative cells of embryosac

- | | A | B | C | D |
|-----|----|-----|-----|----|
| *a) | IV | III | II | I |
| b) | V | III | II | I |
| c) | IV | II | III | V |
| d) | IV | III | I | II |

20. [A]: In two celled pollen grain the two cells are unequal in size.

[R]: They are formed due to mitotic division

- a) Both A and R are true and R is the correct explanation of A
 *b) Both A and R are true but R is not the correct explanation of A
 c) A is true but R is false
 d) A and R are false

21. Barrier to avoid self-pollination between stamens and pistil is

- a) heterostyly *b) herkogamy c) dichogamy d)dicliny

22. What is true for wall of pollen sac

- a) Endothecium occurs inner to stomium b) Tapetum lies below the endothecium
 c) middle layers occur below the epidermis and outside the tapetum
 *d) middle layers lie between endothecium and tapetum.

23. Match the following

List – I		List – II	
A)	Fusiform cell	I)	Antipodals
B)	Cell with irregularly lobed nucleus	II)	Central cell
C)	Cell with filiform apparatus	III)	Vegetative cell
D)	Vegetative cells of embryo sac	IV)	Synergid
		V)	Generative cell

- A B C D**
 *a) V III IV I
 b) IV III II I
 c) V IV II III
 d) IV III II I

24. [A]: The ratio between the number of male gametes in male gametophyte to number of female gametes in female gametophyte is 1 : 2

[R]: A female gametophyte has more gametes than male gametophyte

- a) Both A and R are true and R is the correct explanation of A
 b) Both A and R are true but R is not the correct explanation of A
 c) A is true but R is false
 *d) A and R are false

25. 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) Water b) Insects c) Animals *d) Wind

26. From among the following situations, 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.

27. Match the following

List – I		List – II	
A)	Ovary with many ovules	I)	Hibiscus
B)	Ovary with one ovule	II)	Michelia
C)	Gynoecium with many carpels	III)	Orchid
D)	Anther with one lobe	IV)	Paddy
		V)	Cycas

- A B C D**
 *a) III IV II I
 b) I IV III V
 c) IV III I II
 d) III IV II V

28. [A]: Parthenium has come to india along with a plant having one ovule in its ovary as contaminant.

[R]: Parthenium is crop plant

- a) Both A and R are true and R is the correct explanation of A
 b) Both A and R are true but R is not the correct explanation of A
 *c) A is true but R is false d) A and R are false

29. In a fertilized embryosac, the haploid, diploid and triploid structures are respectively

- *a) synergid, zygote, primary endosperm nucleus
- b) synergid, antipodal, polar nuclei
- c) Antipodal, Synergid, Primary endosperm nucleus
- d) Synergid, polar nuclei, Zygote

30. In an embryosac, the cells that degenerate after fertilization are

- a) Synergids, Primary endosperm nucleus
- *b) Synergids, antipodals
- c) Antipodals, Primary Endosperm Cell
- d) Egg, Antipodals

31. Match the following

List – I	List – II
A) Basal part of the ovule body	I) Micropyle
B) Structure attaches the ovule to placenta	II) Chalaza
C) Junction between ovule body and ovule stalk	III) Funicle
D) Integument uncovered part of nucellus	IV) Hilum
	V) Nucellus

- A B C D
- *a) II III IV I
- b) II III V I
- c) V III IV I
- d) I III IV II

32. [A]: Ovules of monocots are unitegmic
[R]: Monocots have single cotyledon in their embryo.

- a) Both A and R are true and R is the correct explanation of A
- *b) Both A and R are true but R is not the correct explanation of A
- c) A is true but R is false
- d) A and R are false

33. While planning for an artificial hybridization 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

34. In the embryos of a typical dicot and a grass, true homologous structures are

- a) Coleorhiza, Coleoptile
- b) Coleoptile, Scutellum
- *c) Cotyledons, Scutellum
- d) Hypocotyl, radicle

35. Match the following

List – I	List – II
A) Structures that arise from placenta	I) Microsporangia
B) Structures present in the anther	II) Nucellus
C) Pollen acceptor	III) Megasporangia
D) Nutritive tissue	IV) Style
	V) Stigma

- A B C D
- *a) III I V II
- b) III I IV II
- c) V II III I
- d) III II IV I

43. Match the following

List – I	List – II	A	B	C	D
A) Number of types of cells in embryosac	I) 5	*a) II	III	IV	I
B) Number of types of cells in male gametophyte	II) 4	b) II	III	V	IV
C) Number of antipodals in embryosac	III) 2	c) III	II	I	V
D) Number of nuclei of embryosac not involved in fertilisation	IV) 3	d) II	III	I	IV
	V) 7				

44. [A]: Embryosac has both dikaryotic cell and monokaryotic cells
 [R]: Only dikaryotic cell is involved in fertilization in an embryosac.

- a) Both A and R are true and R is the correct explanation of A
 b) Both A and R are true but R is not the correct explanation of A
 *c) A is true but R is false
 d) A and R are false

45. The character of Anatropous ovule is

- a) Embryosac is curved
 b) nucellus is curved
 c) ovule body is curved
 *d) Ovule body and funiculus are parallel to each other

46. The distribution of cells in an embryosac is in the following pattern

- a) 3, 2, 3
 b) 3, 3, 1
 c) 1, 3, 3
 *d) 3, 1, 3

47. Match the following

List – I	List – II	A	B	C	D
A) Curved embryosac	I) <i>Pteris</i>	a) V	III	II	I
B) Curved ovule with uncurved embryosac	II) <i>Polygonum</i>	b) III	II	I	IV
C) Uncurved ovule with uncurved embryosac	III) Sunflower family	*c) IV	III	II	I
D) Has neither ovules nor embryosacs	IV) Bean family	d) III	IV	I	II
	V) <i>Primula</i>				

48. [A]: Helianthus ovules are anatropous

[R]: Anatropous ovules are always unitegimic

- a) Both A and R are true and R is the correct explanation of A
 b) Both A and R are true but R is not the correct explanation of A
 *c) A is true but R is false
 d) A and R are false

49. The ratio between the number of synergids and antipodals in an embryosac is

- a) 1 : 2
 b) 2 : 5
 c) 3 : 4
 *d) 2 : 3

50. For pollination the source of pollen is the same plant in

- I. Autogamy II. Cleistogamy III. Xenogamy IV. Geitonogamy
 a) I, II, III, IV b) II, III, IV *c) I, II, IV d) II, III, I

51. Match the following

List – I	List – II
A) Inflorescence	I) Autogamy
B) Functionally and genetically self pollination	II) Geitonogamy
C) Functionally cross pollination and genetically self pollination	III) Cone
D) Functionally and genetically cross pollination	IV) Cob
	V) Xenogamy

- A B C D
 *a) IV I II V
 b) III II I IV
 c) III I II V
 d) IV II I V

52. [A]: Grasses show wind pollination

[R]: Poaceae members have sticky pollen grains

- a) Both A and R are true and R is the correct explanation of A
 b) Both A and R are true but R is not the correct explanation of A
 *c) A is true but R is false d) A and R are false

53. Endosperm is not formed in

- a) Fabaceae b) Compositae *c) Orchidaceae d) Cucurbitaceae

54. The point at which the funiculus touches the ovule body is

- a) Placenta b) Micropyle *c) Hilum d) Chalaza

55. Match the following

List – I	List – II
A) Pollinates the flowers of <i>Yucca</i>	I) Wind
B) Pollinates the flowers of <i>Ficus</i>	II) Water
C) Pollinates the flowers of <i>Zostera</i>	III) Blastophaga
D) Pollinates the flowers of <i>Oryza</i>	IV) Tagetacula
	V) Ophrys

- A B C D
 *a) IV III II I
 b) V III II I
 c) I III II IV
 d) II I III V

56. [A]: Pollination by Squirrels is Therophily

[R]: Squirrels are a type of mammals.

- *a) Both A and R are true and R is the correct explanation of A
 b) Both A and R are true but R is not the correct explanation of A
 c) A is true but R is false d) A and R are false

57. Pollination by mammals is called as

- *a) Therophily b) Herpatophily c) Cantharophily d) Myophily

58. Fertilization takes place in

- a) Ovule *b) Embryosac c) Ovary d) Carpel

59. Match the following

List – I	List – II
A) Chiropterophily	I) Flies
B) Ornithophily	II) Snakes
C) Ophiophily	III) Bats
D) Entomophily	IV) Birds
	V) Snails

- A B C D
 *a) III IV II I
 b) IV V I II
 c) V IV II I
 d) III II I V

60. [A]: Amorphophallus has largest inflorescence

[R]: It is entomophilous

- a) Both A and R are true and R is the correct explanation of A
 *b) Both A and R are true but R is not the correct explanation of A
 c) A is true but R is false d) A and R are false

61. Free nuclear divisions take place during

- a) Formation of male gametophyte b) Microsporogenesis
 c) Meegasporogenesis *d) formation of female gametophyte

62. If an ovary has 50 ovules, the number of non-functional megaspores formed in the ovary is

- a) 50 b) 200 *c) 150 d) 100

63. Match the following

List – I	List – II
A) Inbreeding depression	I) Cleistogamy
B) Abutilon	II) Autogamy
C) Prevents Geitonogamy	III) Self incompatibility
D) Assures seed production	IV) Dioecy
	V) Monoecy

- A B C D
 a) II III V I
 b) III II IV I
 c) IV V I III
 *d) II III IV I

64. [A]: An autogamous flower must possess the anthers and stigma in close proximity.

[R]: In a self-pollinated flower both androecium and gynoecium attain maturity at the same time

- a) Both A and R are true and R is the correct explanation of A
 *b) Both A and R are true but R is not the correct explanation of A
 c) A is true but R is false d) A and R are false

65. Unisexual flowers are seen in

- a) Castor b) Maize c) Cucurbits *d) All

66. Solanum shows

- *a) Protogyny b) Protandry c) heterostyly d) herkogamy

67. Match the following

List - I	List - II
A) Herkogamy	I) Papaya
B) Protogyny	II) Sunflower
C) Protandry	III) <i>Oxalis</i>
D) Dicliny	IV) <i>Datura</i>
	V) <i>Gloriosa</i>

- A B C D
a) I II III IV
b) II III IV V
*c) V IV II I
d) V IV II III

68. [A]: An insect visit to a flower always ensures cross pollination

[R]: Insects visits the flower only for nectar

- a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true but R is not the correct explanation of A
c) A is true but R is false *d) A and R are false

69. Hydrilla is hydrophilous because

- a) it shows epihydrogamy b) rain water helps in pollinating the plant
*c) it is submerged hydrophyte d) Free floating hydrophyte

70. The rewards given by a plant to its pollinators are

- I. Nectar II. Pollen
III. Brightly colored petals IV. Nutritious ovules

- a) I, III b) I, II, III c) II, III, IV *d) I, II, IV

71. Match the following

List - I	List - II
A) Triple fusion	I) Entry pollen tube into ovule through micropyle
B) Mesogamy	II) Entry of pollen tube into ovule through integuments
C) Syngamy	III) Fusion of polar nuclei and male gamete
D) Porogamy	IV) Fusion of male and female gametes
	V) Entry of pollen tube into embryosac

- A B C D
*a) III II IV I
b) II III V IV
c) I II III IV
d) III II V I

72. [A]: Interaction between the stigma and pollen of same flower is unsuccessful in Abutilon

[R]: Abutilon shows cross compatibility

- a) Both A and R are true and R is the correct explanation of A
*b) Both A and R are true but R is not the correct explanation of A
c) A is true but R is false d) A and R are false

73. The most common type of endosperm in Angiosperm is

- a) formed before fertilisation b) Cellular endosperm
*c) Free nuclear endosperm d) Helobial endosperm

74. Dimorphic endosperm is seen in

- *a) *Cocos* b) Beet c) Black pepper d) Castor

75. Match the following

List – I	List – II
A) Albuminous seed	I) Beet root
B) Exalbuminous seed	II) Pinus
C) Haploid endosperm	III) Wheat
D) Perispermic seed	IV) Beans
	V) Orchids

- A B C D
 *a) III IV II I
 b) III V II I
 c) IV III I II
 d) V III I IV

76. [A]: Perisperm of seed belongs to parental generation sporophyte
 [R]: It is diploid

- a) Both A and R are true and R is the correct explanation of A
 *b) Both A and R are true but R is not the correct explanation of A
 c) A is true but R is false
 d) A and R are false

77. Polyembryony is seen in

- *a) Mango b) Beet c) Grapes d) Banana

78. Apomixis is common in plants with

- *a) cypsela fruit b) Berry c) Schizocarp d) Aggregate fruit

79. Match the following

List – I	List – II
A) Apomixis	I) Lupinus
B) Polyembryony	II) Poaceae
C) Parthenocarpy	III) Citrus
D) Longest seed viability	IV) Banana
	V) Pteris

- A B C D
 *a) II III IV I
 b) II III V I
 c) III I IV II
 d) IV V I II

80. [A]: Plants formed from apomictic embryos of a plant are called as clones
 [R]: Apomixis is asexual embryogeny.

- *a) Both A and R are true and R is the correct explanation of A
 b) Both A and R are true but R is not the correct explanation of A
 c) A is true but R is false
 d) A and R are false

81. The seed viability of Phoenix dactylifera is

- a) 10 years b) 1000 years c) 10 000 years *d) 2000 years

82. Lightest seeds are seen in

- *a) Orchids b) Grasses c) Asteraceae d) Fabaceae

83. Match the following

List – I	List – II
A) Largest seed	I) Maize
B) Fruits dispersed by animals	II) Figs
C) Seeds dispersed by animals	III) Martynia

- A B C D
 a) V III II IV
 b) IV III II I
 *c) IV III II I

D) Seed with aleurone layer	IV) Lodoicea
	V) Datura

d) IV II III V

84. [A]: Seeds can be stored for longer durations.

[R]: Fertilised ovules driest structures of plants.

- *a) Both A and R are true and R is the correct explanation of A
- b) Both A and R are true but R is not the correct explanation of A
- c) A is true but R is false

d) A and R are false

85. Well exposed stamens are present in plants pollinated by

- a) Water
- *b) Wind
- c) Insects

d) Birds

86. Pistillate flowers with elongated pedicels are seen in

- *a) Vallisneria
- b) Zostera
- c) Oryza

d) Hibiscus

87. [A]: Apomictic seed production is one of the objectives of crop improvement.

[R]: It avoids the money incurred for hybrid seed production

- *a) Both A and R are true and R is the correct explanation of A
- b) Both A and R are true but R is not the correct explanation of A
- c) A is true but R is false

d) A and R are false

88. Autogamy is not seen in

- I. Papaya
- II. Maize
- III. Abutilon

- a) I, II, III
- b) II, III
- *c) I, II

d) I, III

89. During artificial hybridization, forceps is used for

- a) artificial cross pollination
- b) Bagging

- c) Rebagging
- *d) Emasculation

90. Match the following

List – I	List – II
A) Endothecium	I) Tissue that nourishes the pollen mother cells
B) Nucellus	II) Tissue that nourishes the zygote to develop into embryo
C) Endosperm	III) Tissue that nourishes the embryonic sac
D) Tapetum	IV) Helps in anther dehiscence
	V) Haploid tissue

A B C D

a) IV III II I

b) II I II I

c) II VI I III

d) V III II I

91. [A]: During artificial hybridization in Papaya crop emasculation is not done.

[R]: Papaya has unisexual flowers

- *a) Both A and R are true and R is the correct explanation of A
- b) Both A and R are true but R is not the correct explanation of A
- c) A is true but R is false

d) A and R are false

92. Pollen tube releases the male gametes into

- *a) Synergid
- b) Egg cell
- c) Antipodal

d) Central cell

- a) I, II b) II, III *c) I, II, III d) All

104. Alurone layer is developed from

- a) Zygote b) Coleorhiza *c) PEN d) Nucellus

105. Shield shaped structure is Monocot embryo is

- a) Coleoptile b) Coleorhiza *c) Scutellum d) Calyptra

106. Epiblast is an outgrowth of

- *a) Coleorhiza b) Coleoptile c) Scutellum d) Plumule

107. Fruits of Cocos are dispersed through

- a) birds b) wind c) Autochory *d) Water

108. Largest seed is seen in

- a) Cucurbits b) *Cocos* *c) *Lodoicea* d) *Cycas*

109. Smallest seeds weigh

- a) 81 μ g b) 8.1 μ g *c) 0.81 μ g d) 0.081 μ g

110. Amount of water in a dry seed is

- *a) 10% b) 4% c) 20% d) 30%