LIFE CYCLE OF ANGIOPERMS

1. Anthophore structure is formed by :
(1) Internode (2) Node
(3) Sepals (4) Petal

2. When embryo develops from a haploid cell of mbryosac, other then egg cell the process is known as
(1) Apogamy (2) Apospory
(3) Adventive embryony (4) Diplo spory

3. Which of the following statement is correct
(1) Flower is a modified root
(2) Flower is a modified shoot
(3) Flower is a modified leaf
(4) Flower is a modified inflorescence

4. Androgenic haploid plants are produced from
(1) Pollen grains
(2) Connective tissues
(3) Tapetum
(4) Wall of the anther

5. Apomixis was discovered by
(1) Leeuwenhoek
(2) Winkler
(3) Juel & murbeck
(4) Navaschin & guignar

6. In which Ear angiosperms originated:-
(1) Coenozoic (2) Jurassic
(3) Mesozoic (4) Holozoic

7. Which of the following is monocarpic plant:-
(1) Shisham (2) Mango
(3) **Pinus** (4) Bamboo

8. Anthophore is:-
(1) Receptacle between two carpels
(2) Inter node between Androecium and Gynoecium
(3) Internode between calyx and corolla
(4) None of these

9. Which is the most logical sequence with reference to the life cycle of angiosperm-
(1) Germination, endosperm formation, seed dispersal, double fertilization.
(2) Cleavage, fertilization, grafting, fruit formation
(3) Pollination fertilization, seed formation and germination
(4) Maturation,mitosis, dfferentiation

10. After culturing the anther of a plants few diploid plant were got along with haploid plant. Which of the following part might have given rise to diploid plant-
(1) Vegetative cell of pollen
(2) Exine of pollen wall
(3) Cell of anther wall
(4) Generative cell of pollen

11. **Capsella** is angiosperm because it possess
(1) Seed (2)Pollen rain
(3) Vascular tissue (4) Fruit

12. Anther of **Arceuthobium** plants is -
(1) Tetra sporangiate
(2) Bisporangiate
(3) Monosporangiate
(4) (1) and (2) both

13. Which pert of the reproductive structure produces both enzyme & hormones
(1) Archesporium (2) middle layer
(3) Tapetum (4) Endo thecium

14. Ubisch bodies are produced in
(1) embryosac
(2) Endothecium
(3) Pollen grain
(4) Tapetum

15. The mature male gametophyte in angiosperm is represented by
(1) Pollen grain
(2) Germinating pollen grain
(3) Embryo sac
(4) Anther

16. Which structure of pollen grain protect it from ultra violet rays
(1) Sporopollenin
(2) Pollen kitt
(3) Ubisch body
(4) 1 & 2 both

17. Tapetum is :-
(1)Parietal in origin usually the inner most layer of anther wall.
(2) Modified endothecium of anther wall
(3) Outer most layer of sporogenous tissue modification
(4) Parietal in origin and is the inner most layer of ovule wall

18. Division taking place in tapetum cell is
(1) Meiosis (2) Amitosis
(3) Endomitosis (4) Only mitosis

19. In **Capsella** pollen grains are shed at
(1) One celled stage
(2) Three cell stage
(3) Three nuclei stage
(4) Two celled stage

20. Example of polyploidy tissue present in An angiosperm plant is
(1) Perisperm (2) Embryo
(3) Tapetum (4) Placenta

21. A microspore is a first cell of
(1) Female gametophyte
(2) Male gametophyte
(3) Sporopore (4) Anther

22. Pollen grains of some plants cause
(1) Pneumonia
(2) Typhoid
(3) Allergy
(4) None of these

23. Anther is generally composed of
(1) One sporangium
(2) Two sporangium
(3) Three sporangium
(4) Four sporangium

24. Anther of **Capsella** is equivalent to which structure of a fern plant
(1) Sporangia
(2) Sours
(3) Antheridia
(4) Male gametangia

25. Occurrence of more than four spores from Spore mother cells is called
(1) Polysiphony
(2) Polyspermy
(3) Polyspory
(4) Poly embryony

26. How many cells or nuclei are present in male gametophyte of **Capsella**
(1) One (2) Two
(3) Three (4) Many

27. How many and what type of male gametes are produced by the male gametophyte of **Capsella**
(1) One,. multi ciliated
(2) two, biciliated
(3) two, multi ciliated
(4) two, non motile

28. The particular type of fossils of pollen grains present in area may be helpful in the exploration of
(1) Coal
(2) Petrolium
(3) Fossil pteridophyte
(4) All the above

29. Ubisch bodies are associated with the development of
(1) Embryo (2)Pollen grains
(3) Endosperm (4) Embryo sac

30. In a pollen grain the small nucleus is
(1) Generative nucleus
(2) Tube nucleus
(3) Vegetative nucleus
(4) Pollen nucleus

31. Most reduced size gametophyte is of
(1) Bryophytes (2) Pteridophyte
(3) Gymnosperm (4) Angiosperm

32. Pollen grain of **Capsella**
(1) Monocopate (2) Bicolpate
(3) Tricopate (4) Polycolpate

33. Essential whorls of a flowers
(1) Calyx and Corolla
(2) Corolla and Gynoecium
(3) Androecium and Gynoecium
(4) All the above

34. Filiform pollen grains are found in:-
(1) **Calotropis** (2) **Myosotis**
(3) **Cyperus** (4) **Zostera**

35. Which statement is false:-
(1) Unisexuality of flower induces cross pollination
(2) Androgenic plants are developed by Guha & Maheshwari
(3) Morphological barriers are absent in Gloriosa flower
(4) All

36. Isobilateral tetrad is common in :-
(1) Monocots (2) Dicots
(3) Halophia (4) None of above

37. Which type of tetrad is found in Magnolia plant:-
(1) Isobilateral (2) T – shaped
(3) Halophia (4) Decussate

38. Sporopollenin is found in:-
(1) Exine (2) Intine
(3) Cytoplasm (4) Nucleus

39. Microsporophyll of Angiosperms is known as:-
(1) Androecium (2) Anther
(3) Filament (4) Stame

40. Main function of endosperm (in anther) is:-
(1) Mechanical (2) Nutritive
(3) Dehiscence (4) None of above

41. Which of the following is wrong statement:-
(1) Monothecous anthers are found in Malvaceae family
(2) Middle layer is ephemeral
(3)Amoeboid tapetum releases ubisch bodies
(4) Banana is a monocarpic plant

42. Development of male gametophyte is :-
(1) Invivo (2) Insitu
(3) Both (4) None of above

43. 'Pollen grains preserved for long time because of
(1) Cellulose (2) Carotenoids
(3) Ubisch bodies (4) Sporopollenin

44. Endosperm, middle layer and tapetum in anther are derived from :-
(1) Primary sporogenous layer
(2) Primary parietal layer
(3) Both (4) None of above

45. Which one is female gametophyte
(1) Embryo (2) Embryosac
(3) Endosperm (4) Pistil

46. What type of placentation is found in **Capsella-**
(1) Axis (2) Parietal
(3) Marginal (4) None

47. The ovule of **Capsella** derives it's nutrition from-
(1) Sporogenous (2) Tapetum
(3) Epithecium (4) Placenta

48. A polygonum type of embryosac is
(1) 7 – celled and 8 nucleate
(2) 8 – celled and 7 nucleate
(3) 7 – celled and 7 nucleate
(4) 8 – celled and 8 nucleate

49. What type of ovule found in **Capsella**
(1) Anatropous (2) Chalazal
(3) Circinotropous (4) None

50. The function megaspore in **Capsella** in always
(1) Micropylar (2) Chalazal
(3) All (4) Any

51. Crassinucellate ovule shows
(1) Absence of nucellus
(2) Well developed nucellus
(3) Partially developed nucellus
(4) Modified nucellus

52. Ovule of an angiosperm is technically equivalent to
(1) A megasporangium
(2) A megagametangium
(3) A micro spore (4) A mega spore

53. Proliferation of integumentary cells at the micropylar region of the ovule in castor develops
(1) Aril (2) Funicle
(3) Caruncle (4) Apophysis

54. Caruncle is formed by
(1) Peduncle (2) Cotyledons
(3) Integument (4) Perisperm

55. Obturators which help in fertilization are out growth of
(1) Pollen tube
(2) Stigma
(3) Placenta or funiculus
(4) Pollen grain

56. Just before fertilization the diploid structure in the ovule of **Capsella** is
(1) Pollen tube
(2) Nucellus / Sec.nucleus
(3) Synergids (4) Antipodals

57. Filiform apparatus are found in
(1) Antipodal cell (2) Egg cell
(3) Secondary nucleus (4) Synergids

58. Which type of gametes are present in **Capsella**
(1) Flagellated (2) Motile
(3) Non-motile (4) None

59. Perisperm is
(1) Persistant nucellus in seed
(2) Ovule wall
(3) Ovule coat
(4) Fossil of haustorial

60. Free nuclear division in an angiosperm takes place during
(1) Gamete formation
(2) Endosperm formation
(3) Embryo formation
(4) Flower formation

61. Archesporial cells in **Capsella** do not from
(1) Epidermis (2) Endothecium
(3) Tapetum
(4) Micro spore mother cell

62. Raphe and hilum in seed represent
(1) Nucellus (2) Funiculus
(3) Integument (4) Micropyle

63. Micropyle in seed helps in the entry of
(1) Male gamete (2) Pollen tube
(3) Water & air (4) All

64. Anther of the **Moringa** plant is:-
(1)Terasporangiate
(2) Monosporangiate
(3) Bisporangiate
(4) Above (1) & (2) both

65. The plant in which G.B. Amici discovered pollen tube is :-
(1) **Capsella** (2) **Parthenium**
(3) **Portulaca** (4) None of this

66. Megasporophyll is called
(1) Gynoecium (2) Carpel
(3) Ovary (4) Stigma

67. How many pollen sace are present in a mature anther
(1) 4 (2) 1
(3) 3 (4) 2

68. The ovule in which single layer nucellar tissue is present is known as:-
(1) Crassinucellate
(2) Tenuinucellate
(3)Amphinucellate
(4) Circinotropous

69. The structure which is formed on micropyle by elongation of inner] integument known as:-
(1) Sarcotesta (2) Operculum
(3) Podostemaceae (4) Crucifereae

70. in which family, endothelium is formed by integuments:-
(1) Malvaceae (2) Compositae
(3) Podostemaceae (4) Crucifereae

71. When outer integument becomes fleshy then known as:-
(1) Aril (2) Sarcotesta
(3) Operculum (4) Caruncle

72. by which structure, Funiculum is attached with ovule
(1) Funiculum (2) Raphe
(3) Hilum (4) Placenta

73. Resupinate type of ovule are:-
(1) Straight (2) Inverted
(3) Transverse (4) Coiled

74. The barrier which is present towards the micropyle is known as:-
(1) Epistase (2) Hypostase
(3) Both of the above (4) None of above

75. Horizontally oriented ovule in Angiosperm is called
(1) Amphitropous
(2) Hemitropous
(3) Campylotropous
(4) Circinotropous

76. The structure is formed by integument which helps in germination is called:-
(1) Aril
(2) Sarcotesta
(3) Caruncle
(4) Operculum

77. In anatropous ovule, the micropyle is present:-
(1) In straight line with Funiculum
(2) At right angles with Funiculum
(3) At 45^0 with Funiculum
(4) Side by side with funiculum

78. In ovule a barrier is present towards the chalaza out side the embryo sac is called:-
(1) Nucellar beak (2) Epistase
(3) Hypostase (4) Perisperm

79. Which structure of the ovule remains unchanged in the end:-
(1) Embryosac (2) Integuments
(3) Funiculum (4) Micropyle

80. The special features of the endothecium of anther of **Capsella:-**
(1) Radially elongated
(2) Thickening of cellulose
(3) Hygroscopic
(4) All of the above

81. the type of cells under going meiosis in the flowers are
(1) Micro spore mother cell & mega spore mother cell
(2) Ovule & stamen
(3) Tapetal cells
(4) Placental cell

82. Which of the following types of embryosac is mostly found in Angiosperm
(1) Bisporic polygonum type
(2) Tetra sporic type
(3) Monosporic – onagred type
(4) Monosporic – polygonum type

83. In many plants, the sexual reproduction replaced by asexual reproduction it is called
(1) Semigamy (2) Apospory
(3) Apomixis (4) Amphimixis

84. "Endostome" and "Exostome" are part of
(1) Nucellus (2) Chalaza
(3) Pollen wall (4) Micropyle

85. Pseudo embryo sac is derived from
(1) Nucellus (2) Integument
(3) Placenta (4) Funiculus

86. Endothelium is derived from
(1) Integument (2) Placenta
(3) Nucellus (4) Funiculus

87. Which type embryosac is found in **Plumbago** plant
(1) Monosporic (2) Bisporic
(3) Tetra sporic (4) None of above

88. Age of the angiosperms known as:-
(1) Mesozoic Ear (2) Holozoic Era
(3) Coenozoic (4) Archaeozoic Ear

89. Female gametophyte like pollens are found in:-
(1) **Sorghum** (2) **Hyacinthus**
(3) **Vinca** (4) None of these

90. Which type of growth is found in pollen tube:-
(1) Lateral growth (2) Apical growth
(3) Middle growth (4) No growth

91. Monosporic eight nucleated embryosac reffered as:-
(1) Peperomia type (2) Allium type
(3) Polygonum type (4)Oenothera type

92. When Funiculum, chalaza, and micropyle lie in one straight line then ovule is called:
(1) Amphitropous (2) Orthotropous
(3) Campylotropous (4) Anatropous

93. Monosporic eight nucleated embryosac reffered as :-
(1) Flowers remains closed
(2) Flowers absent
(3) Flowers open
(4) Flowers gamopetalous

94. When pollen grains of a flower are transferred to stigma of another flower on a different plant the process is called
(1) Geitonogamy (2) Xenogamy
(3) Autogamy (4) Homogamy

95. Which anther and stigma mature at the same time is called as
(1) Misogamy (2) Allogamy
(3) Xenogamy (4) Homogamy

96. Self-pollination means
(1) Transfer of pollen from anthers to stigma in the same flowers
(2) Transfer of pollen from one flowers to another on the different plant
(3) Occurrence of male and female sex organ in the same flowers
(4) Germination of pollen

97. "Lever mechanism" or "turn pipe mechamsm" for pollination is characteristic feature of
(1) **Antirrhinum** (2) **Ocimum**
(3) **Salvia** (4) **Ficus**

98. Maize is best example of:
(1) Anemophilous
(2) Ornithophilous
(3) Entomophilous
(4) Hydrophilous

99. Translator apparatus is found in
(1) Mustard (2) Pea
(3) Calotropis (4) Mango

100. Which type of pollination occurs in **Capsella**
(1) Stigmatic (2) Micropylar
(3) Nucellar (4) None

101. Insect pollinated flowers usually possess
(1) Brightly coloured pollens in large quantity
(2) Dry pollens with smooth surface
(3) Sticky pollen and rough surface stigma
(4) Light coloured scented pollen covered with nectar

102. A close relation between a flower and a pollinating agent is best exemplified by
(1) **Cocos** (2) **Salvia**
(3) **Yucca** (4) **Avena**

103. Polysiphonous pollen grains occurs in
(1) Malvaceae (2) Cucurbitaceae
(3) Both (4) None of these

104. Pollen tube was discovered by
(1) Strasburger (2) Hormeister
(3) Amici (4) Winkler

105. Which of the following promote pollen germination and tube growth
(1) Sucrose (2) Boron
(3) Calcium (4) Potassium

106. Pollen tube exhibits
(1) Basal growth (2) Apical growth
(3) Both the above
(4) Intercalary growth

107. Movement of pollen tube is
(1) Tactic (2) Tropic
(3) Nastic (4) Autonomous

108. Pollen tube is composed of
(1) Pectin (2) Cutin
(3) Sporopollenin (4) Pecto-cellulose

109. Polyembryony was first discovered by
(1) Rosenberg (2) Hormeister
(3) Leeuwenhoek (4) Guha

110. Longest pollen tube is found in:
(1) Wheat (2) Maize
(3) Barley (4) Rice

111. Tegmen of the seed develops from:-
(1) Perisperm (2) Funiculum
(3) Inner integument
(4) Outer integument

112. Stigma of Anemophilous flower is:-
(1) Rough (2) Smooth
(3) Sticky (4) None of above

113. The most simple and most common type of embryosac discovered by:-
(1) Nawaschin (2) Strasburger
(3) Schleiden (4) Amici

114. Endosperm is not formed in the members of:-
(1) Compositae (2) Orchidaceae
(3) Cucurbitaceae (4) Malvaceae

115. In **Casuarina**, pollen tube enters through:-
(1) Integument (2) Chalaza
(3) Micropyle (4) Funiculum

116. 'Callase' anzme which dissolve callose of tetrad of microspores to separate 4 microspores is provided by:-
(1) Pollen grains (2) Middle layer
(3) Tapetum (4) Endothecium

117. The common type of embryo sac development is:-
(1) Oenothera type (2) Polygonum
(3) Allium type (4) Adoxa type

118. Example of Epihydrophily is:-
(1) **Zostera** (2) **Vallisneria**
(3) **Ceratophyllum** (4) **Nymphea**

119. Pollination in **Yucca** plant takes place by:-
(1) Honey bee (2) Butterfly
(3) Pronuba (4) Bird

120. The primary Endosperm nucleus In **Polygonum** type of Embryosac is:-
(1) Haploid (2) Diploid
(3) Triploid (4) Tetraploid

121. Protandry is the situation when:-(1) Anther matures later then the stigma of flower
(2) Anther matures learlier then the stigma of flower
(3) Anther and stigma mature at the same time
(4) All of the above

122. The anterior end of pollen tube burst by the process of _____ in embryosac-
(1) Imbibition (2) Exo-osmosis
(3)Enzymatic action (4) Endo-osomosis

123. Which of the following nuclei participate in double fertilization-
(1) The egg
(2) The secondary nucleus
(3) The two male nuclei
(4) All of the above

124. Perisperm is
(1) Degenerate secondary nucleus
(2) Remnant of nucleus
(3) Peripheral part of endosperm
(4) Degenerate synergids

125. The Parenchyma tissue which forms the bulk of ovule where the sporogenous tissue is produced is
(1) Megaspore mother cell
(2) Nucellus (3) Ovule
(4) Embryo sac

126. The main embryo developed from the structure formed as a result of
(1) Double fertilization (2) Triple fusion
(3) Syngamy
(4) fusion of two polar nuclei of an embryosac

127. After fertilization the outer integument of ovule changes into-
(1) Testa (2) Tegmen
(3) Fruit (4) Seed

128. In **Capsella** the pollen tube enters through the micropyle, therefore fertilization is-
(1) Porogamous (2) Chalazogamous
(3) Mesogamous (4) Basigamous

129. the process of double fertilization was discovered by
(1) Hofmeister (2) Strasburger
(3) Nawaschin (4) Amici

130. the chalazogamy was reported by **"Treub"** in
(1) **Casuarina** (2) **Capsella**
(3) **Capsicum** (4) Datura

131. after fertilization the seed is developed from
(1) Ovule (2) Ovary
(3) Embryo (4) Endosperm

132. "the tip of pollen tube after entering into embryosac transform into embryo" this misleading report was of-
(1) Schleiden (2) Amici
(3) Hormeister (4) Trueb

133. double fertilization means
(1) Fusion of male gametes and ovum
(2) Fusion of two polar bodies
(3) A male gamete fused with egg and second male gamete fused with secondary nucleus
(4) All the above

134. after fertilization seed coat is formed by:
(1) Chalaza (2) Ovule
(3) Integument (4) Embryo

135. pollen tube enters into embryosac of Angiosperm through the
(1) Egg cell
(2) Any one of the synergids
(3) Any one of the antipodal cells
(4) None of these

136. deplopement of embryo from
(1) Two polar nuclei of embryosac
(2) Secondary nucleus and male gametes
(3) Egg cell and male gamete
(4) Synergids

137. who discovered fertilization inplant
(1) Nawaschin (2) Ovule
(3) Amici (4) Nucellus

138. fertilization & double fertilization occurs in
(1) Ovary (2) vule
(3) Embryo sac (4) Nucellus

139. the fusion product nuclei and male gamet is
(1) Nucellus
(2) Primary endosperm nucleus
(3) Zygote
(4) Secondary nucleus

140. When a diploid plant is crossed with a tetraploid plant, the endosperm will be:-
(1) Ovary (2) Ovule
(3) Embryo sac (4) Nucellus

141. Stigma of the entomophilous flower is-
(1) Sticky (2) Rough
(3) Hairy (4) Smooth

142. Bisporic type of embryo sac is found in:-
(1) **Polygonum** (2) **Oenothera**
(3) **Adoxa** (4) **Allium**

143. In which plant self sterility is found :-
(1) **Gossypium** (2) **Pitunia**
(3) Marigold (4) Primrose

144. In pollination "Trap door mechanism " is found in:-
(1) **Salvia** (2) **Aristolochia**
(3) **Ficus** (4) **Yucca**

145. Male gametes of the **Capsella** fused with:-
(1) Egg
(2) Secondary nucleus
(3) Both of the above
(4) None of above

146. Synergids help in
(1) Pollen entry into embryosac
(2) Endosperm
(3) Embryosac
(4) Both 1 & 3

147. Embryogeny in **Capsella** was first of all studied by
(1) Hanstein (2) Famintzin
(3) Souges (4) All

148. The term xenia denotes the effect of pollen on the
(1) Somatic tissue
(2) Root
(3) Flowers
(4) Endosperm

149. In **Capsella** the endosperm is formed
(1) At the time of fertilization
(2) Before fertilization
(3) After fertilization
(4) Before pollination

150. The function of suspensor is
(1) To provide water
(2) To provide oxygen
(3) To thrust the embryo towards endosperm to provide more food
(4) To suck food

151.what are x-bodies in ovules
(1) Two polar nuclei
(2) Disintegrating tube nucleus & synergids nucleus
(3) Filiform apparatus
(4) Two male nuclei

152. Scutellum is a
(1) Endosperm of gymnosperm
(2) Sheild shaped cotyledon of monocot
(3) Protective covering of radicle
(4) Protective covering of plumule

153. Coleoptile is
(1) Coat of plumule
(2) Coat of Radicle
(3) Plumule
(4) None of above

154. Water of coconut is
(1) Endosperm (2) Nucellus
(3) Endocarp (4) Mesocarp

155. Suapensor in one celled in
(1) **Capsella** (2) **Triticum**
(3) **Raphanus** (4) **Brassica**

156. Embryonal development in **Capsella** in –
(1) Asteroid
(2) Caryophylloid type
(3) Crucifer type
(4) Solanum type

157. The suspensor in **Capsella** develops from
(1) Apical – cell
(2) Basal – cell
(3) Micropylar – cell
(4) Apical & basal cell both

158. In monocot plant like maize according to old concept the endosperm is
(1) Monoploid
(2) Diploid
(3) Mixture of Monoploid & diploids cells
(4) Triploid

159. Mosaic endosperm is characteristic of:-
(1) Wheat (2) **Plumbago**
(3) Maize (4) Coconut

160. Tigellum is known as:-
(1) Testa (2) Tegmen
(3) Both of the above
(4) Main axis of the embryo

161. Chasmogamousand Cleistogamous type of flower are found in:-
(1) Primrose
(2) **Ficus religiosa**
(3) **Commelina**
(4) **Calotropis**

162. Apex of radicle is formed with help of:-
(1) Epibasal cells
(2) Hypobasal cells
(3) Cotyledon
(4) Hypophysis

163. Embryo is formed in Dicotyledon plants:-
(1) Lateral (2) At the apex
(3) In middle (4) 2 & 3 both

164. The last cell of suspensor is called:-
(1) Hypophysis (2) Suspended cell
(3) Terminal cell (4) Haustorial cell

165. Haploid, diploid and triploid conditions respectively can be traced in :-
(1) Egg, Nucellus, Endosperm
(2) Antipodal, Egg, Endosperm
(3)Endosperm,Nucellus, Synergids
(4)Antipodal,Synergids& Integuments

166. Formation of fruit without fertilization known as :
(1) Parthenogenesis (2) Polyembryony
(3) Polygamy (4) Parthenocarpy

167. If the leaf of **Capsella** has 46 number of chromosomes then how many chromosomes number will be there in endosperm –
(1) 46 (2) 23
(3) 69 (4) 138

168. If the nucellus cell of an Angiosperm contains 24 chromosomes the number of chromosomes present in pollen grain, endosperm & embryo will be
(1) 24, 36, 24 (2) 12, 36, 24
(3) 12, 24, 36 (4) 24, 12, 12

169. How many meiotic division are required to produce 40 seeds in the **Capsella** plant
(1) 50 (2) 40
(3) 80 (4) 20

170. The number of nuclei taking part in double fertilization are
(1) two (2) three
(3) four (4) five

171. In Angiosperm, if haploid number of chromosome is 12 then what will be the no. of chromosomes in integuments and synergids:-
(1) 12, 12 (2) 24, 12
(3) 24, 24 (4) 12, 24

172. How many meiotic division are required for the formation of 200 seeds of **Capsella:-**
(1) 200 (2) 400
(3) 250 (4) 300

173. In Angiosperm, if number of chromosomes in endosperm is 30, what will be the no. of chromosome in nucellus:-
(1) 15 (2) 30
(3) 20 (4) 40

174. How many meiotic division are essential in formation of 100 seeds in Cyperaceae family:-
(1) 100 (2) 125
(3) 150 (4) 200

175. How many meiotic division are necessary for formation of 100 functional megaspores:-
(1) 25 (2) 50
(3) 100 (4) 200

176. What5 type of germination is found in **Capsella**
(1) Hypogeal (2) Epigeal
(3) Both (4) None

177. In albuminous seed, the food is stored in-
(1) Testa (2) Plumule
(3) Cotyledon (4) Endosperm

178. Seed is not a morphological equivalent of spore because –
(1) Spore is not produced through fertilization
(2) Spore does not posses embryo & endosperm
(3) Spore is a haploid structure
(4) All the above

179. In non endospermic seed or ex-albuminous seed
(1) The end sperm may be completely used up by developing embryo
(2) No endosperm form
(3) Endosperm is starchy
(4) Endosperm is oily

180. Helobial endosperm is restricted usually to
(1) Gymnosperm (2) Dicotytedons
(3) Monocotyledons (4) Both 2 & 3

181. "Ruminate endosperm" is commonly found in seed of
(1) Euphorbiaceae (2) Cruciferae
(3) Palmae or Arecaceae
(4) Compositae

182. The seeds of which type of plant have no dormancy
(1) Xerophytes
(2) Mesophytes
(3) Halophytes and hydrophyte
(4) Mangrooves

183. What is the cause of long-dormancy in seeds
(1) Impermiable seed coat
(2) Undeveloped embryo
(3) Presence of ABA/Ferulic acid
(4) All of the above

184. Seeds of Watermelon are embedded in water pulp of the fruit but do not germinate because
(1) Light is absent (2) O_2 is absent
(3) ABA is present
(4) Nutrients are absent

185. Low temperature induction of germination is called
(1) Vernalization (2) Stratification
(3) Scarification (4) Chilling

186. What is the cause of dormancy in Tomato seeds
(1) Hard seed coat
(2) Presence of Ferulic acid
(3) Undeveloped embryo
(4) All the above

187. The first requirement for germination of seed is
(1) Light (2) H_20
(3) Low temperature (4) Mineral salts

188. Which light is more effective in inducing germination of seeds
(1) Red (2) Blue
(3) Green (4) Infra re

189. Mechanical cracking of hard seed coat can induce germination of certain seeds this phenomenon is termed as
(1) Cracking (2) Stratification
(3) Scarification (4) Chilling

190. During seed germination
(1) Heat is liberate
(2) Starch is synthesized
(3) Light is absorbed
(4) Fat is synthesized

191. What type of pattern of endosperm, development in **Capsella**
(1) Cellular type (2) Nuclear type
(3) Helobial type (4) None of the above

192. Cotyledons absent in seed of
(1) **Capsella** (2) **Cuscuta**
(3) **Santalum** (4) 2 and 3 both

193. The viability of seed can be ascertained with the help of
(1) IAA (2) A.B.A.
(3) T.T.C. (4) N.A.D.P.

194. Which hormone can break dormancy of seed-
(1) ABA (2) Auxin
(3) GA (4) Coumarin

195. The seed of black pepper is
(1) Albuminous
(2) Exalbuminous
(3) Perispermic
(4) With fleshy testa

196. The seed of **Capsella** is
(1) Albuminous monocot
(2) Ex albuminous dicot
(3) Albuminous dicot
(4) Ex albuminous monocot

197. The most common natural inhibitor of seed germination is
(1) Ferulic acid
(2) Abscisic acid
(3) Citric acid
(4) Phytochrome

198. Which of the following is not essential for the germination of seeds
(1) Light (2) Temperature
(3) O_2 (4) H_2O

199. In which of the following plants cotyledons remains under ground during germination:-
(1) **Rhizophora** (2) Gram
(3) Bean (4) Castor

200. In which part of the Embryo maximum growth take place in Epigeal germination:-
(1) Radicle (2) Plumule
(3) Epicotyl (4) Hypocotyl

201. The chemical which can break bud dormancy by its spray:-
(1) IAA (2) 2, 4 – D
(3) Zeatin (4) Thiourea

202. Seeds of Gram are:-
(1) Exalbuminous and Epigeal
(2) Exalbuminous and hypogeal
(3) Albuminous and Epigeal
(4) Al buminous and hypogeal

203. In which part of embryo maximum growth take place in hypogeal germination:-
(1) Plumule (2) Radicle
(3) Epicotyl (4) Hypocotyl

204. Which of the following is negative Photoblastic seed
(1) **Lepidium** (2) **Nigella**
(3) Tobacco (4) **Capsella**

205. At which temperature, germination of seed can not possible in most of the plants:-
(1) 10^0-15^0C (2) 5^0 – 10^0C
(3) 0^0 – 5^0C (4) 20^0 – 25^0C

206. The bud dormancy in Potato is due to
(1) ABA (2) Ethylene
(3) Inhibitor -β (4) Phenolics

207. Important "Aeroallergens in India is:-
(1) **Serjania** (2) **Amaranthus**
(3) **Borassus** (4) **Holoptelia**

208. Fore most Indian Embryologist was :-
(1) S.C. Maheshwari
(2) P. Maheshwari
(3) H.Y. Mohan Ram
(4) None of above

209. In seeds, characterised by hypogeal germination, cotyledons generally do not becomes green because:-
(1) They lack chloroplast
(2) They developed very early
(3) Contains inhibitor
(4) They remains below the soil

210. Which statement is false:-
(1) Pollens are received by stigma
(2) Pollens tube discovered by Amici
(3) Pollens kitt is absent on pollen grains of **Capsella**
(4) Tigellum is the main axis of embryo

QUESTIONS ASKED IN PREVIOUS MEDICAL EXAMS

211. Embryo of Sunflower has :- **[AIPMT 1998]**
(1) Two cotyledons
(2) One cotyledons
(3) Eight cotyledons
(4) Cotyledon absent

212. Ornithophily takes place in :
(1) Yellow flower having nectaries
(2) Scented flower
(3) Flower with charming colour
(4) Modified corolla

213. The plant having largest flower is : **[AIPMT1999]**
(1) Total stem parasite
(2) Epiphyte
(3) Total root parasite
(4) Partial stem parasite

214. Eight nucleated embryosac is –
(1) Only monosporic
(2) Only Bisporic
(3) Only tetrasporic
(4) Any of the above

215. Endosperm is formed during the double fertilization by-
(1) Two polar nuclei & one male gamete
(2) One polar nuclei & One male gamete
(3) Ovum and male gamete
(4) Two polar nuclei & two male gametes

216. By which action a seed coat becomes permeable to water - **[AIPMT 2001]**
(1) Scarification
(2) Stratification
(3) Vernalization
(4) All of the above

217. Anemophily type of pollination is found in :
(1) **Salvia** (2) Bottle brush
(3) **Vallisneria** (4) Coconut

218. What is the eyes of Potato :
(1) Auxillary bud
(2) Accessary bud
(3) Adventitious bud
(4) Apical bud

219. Which one breaks the dormancy of Potato tuber
(1) Gibberellin (2) IAA
(3) ABA (4) Zeatin

220. In grass what happens in microspore mother cell for the formation of mature pollen grains :
(1) One meiotic and two mitotic divisions
(2) One meiotic and one mitotic divisions
(3) One meiotic divisions
(4) One mitotic divisions

221. Adventive embryony in **Citrus** is due to: **[AIPMT 2001]**
(1) Nucellus
(2) Integuments
(3) Zygotic embryo
(4) Fertilized egg

222. In Angiosperms pollen tube liberate their male gametes into the : **[AIPMT 2002]**
(1) Central cell
(2) Antipodal cells
(3) Egg cell
(4) Synergids

223. What is the direction of micropyle in anatropous ovule : **[AIPMT 2002]**
(1) Upward (2) Downward
(3) Right (4) Left

224. Which type of association is found in between entomophilous flower and pollinating agent:
[AIPMT 2002] [AIPMT 2001]
(1) Mutualism (2) Commonsalism
(3) Co-operation (4) Co-evolution

225. In Angioperms all the four microspores of tetrad are covered by a layer which is formed by :
(1) Pectocellulose
(2) Callose **[AIPMT 2002]**
(3) Cellulose
(4) Sporopollenin

226. Seed dormancy is due to the presence of :
(1) Ethylene (2) Abscisic acid
(3) I.A.A. (4) Starch

227. In a following plant, archesporium Gives riseto:- **[AIPMT 2003]**
(1) Only the wall of the sporangium
(2) Both wall and the sporogenous cells
(3) Wall and the tapetum
(4) Only tapetum and sporogenous cells

228. The aleurone layer in Maize grain is specially rich in :-
[AIPMT 2003]
(1) Proteins (2) Starch
(3) Lipids (4) Auxins

229. Anthesis is a phenomenon which refers to-
(1) Formation of pollen
[AIPMT 2004]
(2) Development of anther
(3) Opening of flower bud
(4) Reception of pollen by stigma

230. An ovule which becomes curved so the nucellus and embryo sac lie at right angles to the funicle is-
[AIPMT 2001]
(1) Campylotropous (2) Anatropous
(3) Orthotropous (4) Hemitropous

231. When a diploid female plant is crossed with a tetraploid male, the Ploidy of endosperm cells in the resulting seed is:-
[AIPMT 2004]
(1) Pentaploidy (2) Diploidy
(3) Tripoloidy (4) Tetraploidy

232. Monothecous anther is found in which family :
[RPMT 2000]
(1) Malvaceae (2) Liliaceae
(3) Brassicaceae (4) Asteraceae

233. Onagrad type of embryo development is found in **[RPMT 2000]**
(1) **Solanum** (2) **Capsella**
(3) **Lilium** (4) **Hibiscus**

234. In **Capsella** which type of embryosac is found **[RPMT 2000]**
(1) Bisporic (2) Monosporic
(3) Tetrasporic (4) Trisporic

235. All the cells in Polygonum type of embryosac are **[RPMT 2000]**
(1) Haploid
(2) Diploid
(3) Haploid and diploid
(4) Haploid and polyploidy

236. In which family pollinia are found
[RPMT 2001]
(1) Papilionaceae
(2) Asteraceae
(3) Asclepiadaceae
(4) Apocyanaceae

237. When the pollens of one flower falls on the stigma of another flower of the same plant then it is known as :-
[RPMT 2000]
(1) Cleistogamy (2) Allogamy
(3) Autogamy (4) Dichogamy

238. What is the liquid part of green Coconut :-
(1)Endosperm
[RPMT 2001]
(2) Female gametophyte
(3) Nucellus
(4) Embryo

239. Parthenogenesis occurs when :-
[RPMT 2001]
(1) When embryo is formed without the fusion of egg and the sperm
(2) When embryo is formed by the fusion of egg and sperm
(3) When embryo is formed from another cell
(4)When sperm produces the embryo directly

240. Nucellus is found in :-
(1) Cell (2) Pollen
(3) Ovule (4) Leaf

241. The nutritive layer of microsporangia of **Capsella**
(1) Endothecium **[RPMT 2002]**
(2) Exothecium
(3) Sporogenous tissue
(4) Tapetum

242. That haploid cell which divides by mitosis to form embryosac:- **[RPMT 2002]**
(1) Megaspore mother cell
(2) Microspore mother cell
(3) Functional megaspore
(4) Non functional megaspore

243. Seed coat is derived from :- **[RPMT 2002]**
(1) Pericarp (2) Epicarp
(3) Integuments of ovule (4) Nucellus

244. What is pollen grain:- **[RPMT 2002]**
(1) Microspore mother cell
(2) Male gamete
(3) Male gametophyte
(4) Partially developed embryo

245. Anther culture yields some haploid and diploid plants. Diploid plants are Producedfrom:- **[RPMT 2003]**
(1) Zygote (2) Seed coat
(3) Anther
(4) Wall of pollengrains

246. Endosperm nucleus is formed by the fusionof : **[RPMT 2002]**
(1) 2 nuclei (2) 3 nuclei
(3) 4 nuclei (4) 5 nuclei

247. Embryosac is represented by :-
(1) Megagametophyte
(2) Megasporophyll
(3) Megagametes
(4) Megaspore

248. Double fertilization is essential for formationof **[RPMT 2004]**
(1) Cotyledons (2) Seed coat
(3) Endosperm (4) Nucellus

249. Entry of pollen tube through micropyleiscalled **[RPMT 2004]**
(1) Porogamy (2) Syngamy
(3) Chalazogamy (4) Mesogamy

250. Pollen grains are able to withstand extremes of temperature and desiccation because their exine is composed of:-
(1) Cutin (2) Suberin
(3) Sporopollenin (4) Callose

251. The pollen tube usually enters the embryosac : **[AIIMS 2004]**
(1) Through one of the synergids
(2) By directly penetrating the egg
(3) Between one synergid and central cell
(4) By knocking off the antipodal cells

252. In which one pair both the plants can be vegetatively propagated by leafpieces: **[AIPMT 2005]**
(1) **Bryophyllum** and **Kalanchoe**
(2) **Chrysanthemum** and **Agave**
(3) **Agave** and **Kalanchoe**
(4) **Asparagus** and **Bryophyllum**

253. In a type of apomixis known as adventive embryony, embryos develop directly from the : **[AIPMT 2005]**
(1) nucellus or integuments
(2) Synergids or antipodals in an embryosac
(3) accessory embryosacs in the ovule
(4) zygote

254. Through which cell of the embryosac, does the pollen tube enter the embryosac:
(1) Egg cell **[AIPMT 2005]**
(2) Central cell
(3) Persistant synergid
(4) Degenerated synergid

255. Which one of the following represents an ovule, where the embryosac becomes horse-shoe shaped and the funiculus and micropyle are close to each other: **[AIPMT 2005]**
(1) Circinotropous (2) Anatropous
(3) Amphitropous (4) Atropous

256. What would be the number of chromosomes in the cells of the aleurone layer in a plant species with 8 chromosomes in its synergids? **[AIPMT 2006]**
(1) 16 (2) 24
(3) 32 (4) 8

257. Treatment of seed at low temperature under moist conditions to break its dormancy is called **[AIPMT 2006]**
(1) Scarification (2) Vernalization
(3) Chelation (4) Stratification

258. The arrangement of the nuclei in a normal embryosac in the dicot plants is **[AIPMT 2006]**
(1) 2 +4 + 2 (2) 3 + 2 +3
(3) 2 + 3 +3 (4) 3 + 3+ 2

259. In a Cereal grain the single cotyledon of embryo is represented by **[AIPMT 2006]**
(1) Coleorrhiza (2) Scutellum
(3) Prophyll (4) Coleoptile

260. Long filamentous threads protruding at the end of a young cob of maize are: **[AIPMT 2006]**
(1) Hairs (2) Anthers
(3) Styles (4) Ovaries

261. In which of the following fruits is the edible part the aril ? **[AIPMT 2006]**
(1) Litchi (2) Custard apple
(3) Pomegranate (4) Orange

262. Embryosac represents: **[RPMT 2006]**
(1) Macrogamete
(2) Macrospore
(3) Macrosprophyll
(4) Macrogametophyte

263. Double fertilization involves :- **[AIIMS 2005]**
(1) Fertilization of the egg by two male gametes
(2) Fertilization of two eggs in the same embryosac by two sperms brought by one pollen tube
(3) Fertilization of the egg and the central cell by two sperms brought by different pollen tubes
(4) Fertilization of the egg and the central cell by two sperms brought by the same pollen tube

264. A scion is grafted to a stock. The quality of fruits produced will be determined by the genotype of
(1) Stock **[AIIMS 2006]**
(2) Scion
(3) Both stock and scion
(4) Neither stock not scion

265. Male gametes in angiosperms are formed by the division of:- **[AIIMS 2007]**
(1) Microspore mother cell
(2) Microspore
(3) Generative cell
(4) Vegetative cell

266. Which one of the following is surrounded by a callose wall ? **[AIPMT 2007]**
(1) Pollen grain
(2) Microspore mother cell
(3) Male gamete
(4) Egg

267. Unisexuality of flowers prevents:- **[AIPMT 2008]**
(1)Geitonogamy, but not xenogamy
(2) Autogamy and geitonogamy
(3)Autogamy, but not geitonogamy]
(4)Bothgeitonogamy and xenogamy

268. Endosperm is consumed by developing embryo in the seed of :- **[AIPMT 2008]**
(1) Pea (2) Maize
(3) Coconut (4) Castor

269. Which one of the following is resistant to enzyme action? **[AIPMT 2008]**
(1) Pollen exine (2)Leaf uticle
(3) Cork (4)Wood fibre

270. What dose the Filiform apparatus do at the entrance into ovule? **[AIPMT 2008]**
(1) It brings about opening of the pollen tube
(2) It guides pollen tube from a synergid to egg
(3) It helps in the entry of pollen tube into a synergid
(4) It prevents entry of more then one pollen tube into the embryo sac

271. Which one of the following Paris of plant structures has haploid number of chromosomes? **[AIPMT 2008]**
(1) Nucellus and antipodal cells
(2) Egg nucleus and secondary nucleus
(3) Megaspore mother cell and antipodal cells
(4) Egg cell and antipodal cells

272. An example of a seed with endosperm, perisperm, and caruncle is: **[AIPMT 2009]**
(1) Castor (2) Cotton (3)Coffee (4) Lily

273. What does Angiosperm mean:- **[RPMT 2007]**
(1) Naked seed (2) Covered seed
(3) Leaf fall (4) Seed bud

274. How many times flowering takes place in biennial plants:- **[RPMT 2007]**
(1) Once (2) Twice (3) Many (4) None

275. Endosperm of Angiosperm is :- **[RPMT 2007]**
(1) 2n (2) 3n (3) n (4) 2n +

LIFE CYCLE OF ANGIOSPERMS ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A.	**1**	**1**	**2**	**1**	**2**	**3**	**4**	**3**	**3**	**3**	**4**	**3**	**3**	**4**	**2**
Q	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
A.	**4**	**1**	**3**	**4**	**3**	**2**	**3**	**4**	**2**	**3**	**3**	**4**	**4**	**2**	**1**
Q.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
A.	**4**	**3**	**3**	**4**	**3**	**1**	**4**	**1**	**4**	**3**	**3**	**3**	**4**	**2**	**2**
Q.	46	47	48	49	50	51	52	53	54	55	56	57	58	58	60
A.	**2**	**4**	**1**	**4**	**2**	**2**	**1**	**3**	**3**	**3**	**2**	**4**	**3**	**1**	**2**
Q.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
A.	**1**	**2**	**3**	**3**	**3**	**2**	**4**	**2**	**2**	**2**	**2**	**3**	**2**	**1**	**2**
Q.	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
A.	**3**	**4**	**3**	**4**	**4**	**1**	**4**	**3**	**4**	**1**	**1**	**3**	**3**	**2**	**2**
Q.	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
A.	**3**	**2**	**3**	**2**	**4**	**1**	**3**	**1**	**3**	**1**	**3**	**3**	**3**	**3**	**2**
Q.	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
A.	**2**	**2**	**4**	**3**	**2**	**3**	**3**	**2**	**2**	**2**	**3**	**2**	**2**	**3**	**3**
Q.	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135
A.	**2**	**4**	**4**	**2**	**2**	**3**	**1**	**1**	**3**	**1**	**1**	**1**	**3**	**3**	**2**
Q.	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150
A.	**3**	**2**	**3**	**2**	**3**	**2**	**4**	**2**	**3**	**3**	**4**	**1**	**4**	**3**	**3**
Q.	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165
A.	**2**	**2**	**1**	**1**	**2**	**3**	**2**	**3**	**3**	**4**	**3**	**4**	**4**	**4**	**1**
Q.	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
A.	**4**	**3**	**2**	**1**	**4**	**2**	**3**	**3**	**4**	**3**	**2**	**4**	**4**	**1**	**3**
Q.	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195
A.	**3**	**4**	**4**	**3**	**2**	**2**	**2**	**1**	**3**	**1**	**2**	**4**	**3**	**3**	**3**
Q.	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210
A.	**2**	**2**	**1**	**2**	**4**	**4**	**2**	**3**	**2**	**3**	**3**	**2**	**2**	**4**	**3**
Q.	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225
A.	**1**	**1**	**3**	**4**	**1**	**1**	**4**	**1**	**1**	**2**	**1**	**1**	**2**	**1**	**2**
Q.	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
A.	**2**	**2**	**1**	**3**	**4**	**4**	**1**	**2**	**2**	**1**	**3**	**3**	**1**	**1**	**3**
Q.	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255
A.	**4**	**3**	**3**	**3**	**3**	**2**	**1**	**3**	**1**	**3**	**1**	**1**	**1**	**4**	**3**
Q.	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270
A.	**2**	**4**	**2**	**2**	**3**	**1**	**4**	**4**	**2**	**3**	**2**	**3**	**1**	**1**	**3**
Q.	271	272	273	274	275										
A.	**4**	**1**	**2**	**1**	**2**										