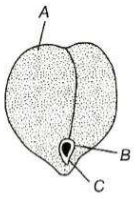
GPLUS EDUCATION

Date :
Time : **BIOLOGY**
Marks :

MORPHOLOGY OF FLOWERING PLANTS

Single Correct Answer Type

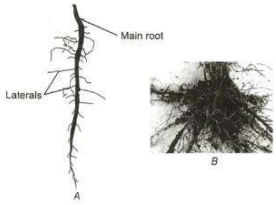
1. Which of the following are not characteristic features of Fabaceae?
   a) Tap root system, compound leaves and receme inflorescence
   b) Flowers actinomorphic, twisted aestivation and gamopetalous
   c) Stamens ten, introrse, basifixed and dithecous
   d) Monocarpellary, ovary superior and bent stigma
2. When the floral appendages are in multiple of 3, 4, 5, they are respectively called
   a) Trimerous, tetramerous, pentamerous
   b) Penatmerous, tetramerous, trimerous
   c) Tripinnate, tetrapinnate, pentapinnate
   d) Tetrapinnate, tripnnate, pentapinnate
3. The type of leaf in *Daucus carota* is
   a) Simple b) Bipinnate c) Tripinnate d) Decompound
4. Most advanced fruit is
   a) Cypsela b) Caryopsis c) Pome d) Etaerio of drupe
5. Identify *A*, *B* and *C* in the given diagram



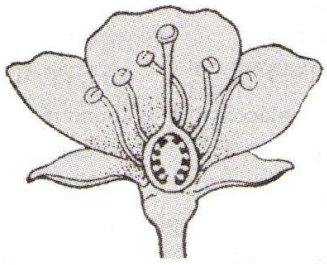
   a) A-Seed coat, B-Micropyle, C-Hilum
   b) A-Seed coat, B-Hilum, C-Micropyle
   c) A-Hilum, B-Seed coat, C-Micropyle
   d) A-Micropyle, B-Seed coat, C-Hilum
6. Pedicel of flower is called
   a) Thalamus b) Receptacle c) Both (a) and (b) d) Either (a) or (b)
7. A tree that has strong erect stem with hollow internodes and solid nodes, is known as
   a) Caudex b) Deliquescent c) Scape d) Culm
8. Identify the correct order (root) from base to root apex
   I. Mineral absorption zone
   II. Soil penetration zone
   III. Cell number increasement zone
   V. Cell elongation zone
   a) II, I, IV, III b) I, II, III, IV c) IV, III, II, I d) III, IV, I, II
9. Study the following statements and choose the correct option.
   I.Buds are present in the axil of leaflets of the compound leaf.
   II.Pulvinus leaf-base is present in some leguminous plants.
   III.In *Alstonia*, the petioles expand, become green and synthesize food.
   IV.Opposite phyllotaxy is seen in guava.
   a) II and IV are correct but I and III are wrong
   b) I and III are correct but II and IV are wrong
   c) I and IV are correct but II and III are wrong
   d) II, III and IV are correct but I is wrong
10. The number of stomata present per cm^2 of a leaf is
    a) 1000 b) Less than 100 c) One million d) None of these

11. Which one of the following series includes the orders Ranales, Parietals and Malvales?
    a) Bicarpellatae b) Thalamiflorae c) Calyciflorae d) Disciflorae
12. Which pair of the following plants represents the condition of modification of stipules into spines?
    a) *Euphorbia* and *Ziziphus* b) *Citrus* and *Euphorbia*
    c) *Ziziphus* and *Bougainvillea* d) *Bougainvillea* and *Citrus*
13. Amla belongs to family
    a) Labiatae b) Fabaceae c) Solanaceae d) Euphorbiaceae
14. The leaves are modified into tendrils, hook, pitcher and bladder in the following plants respectively
    a) Sweet pea, cat's nail, *Nepenthes*, *Utricularia* b) Sweet pea, cat's nail, *Utricularia*,*Nepenthes*
    c) *Nepenthes*, cat's nail, sweet pea, *Utricularia* d) *Nepenthes*, sweet pea, cat's nail, *Utricularia*
15. Fruits are formed in
    a) *Brassica* b) *Fern* c) *Cycas* d) *Funaria*
16. Hypanthodium inflorescence is found in
    a) *Ficus* b) Tulsi c) *Cedrus* d) *Calotropis*
17. I. Bear leaves and branches
    II. Conduction of water and minerals
    III. Storage of food
    These are the functions of
    a) Root b) Stem c) Leaves d) Root cap
18. Tulip belong to family
    a) Asteraceae b) Liliaceae c) Brassicaceae d) Malvaceae
19. The floral formula is of $\mathrm{Br} \bullet \oplus \male\female P_{(3+3)}\, A_{3+3}\, G\,(3)$ belongs to plant
    a) *Allium cepa* b) Sunflower c) *Cucurbita* d) *Brassica*
20. Which of the following is not a characteristic feature of Fabaceae?
    a) Descendingly imbricate, ten stamens, diadelphous, ovary superior
    b) Sepals five, gamosepalous, imbricate aestivation, placentation marginal
    c) Monocarpellary, ovary superior, style long, slightly bent at the apex
    d) Corolla, five petals, polypetalous, anterior one large and outermost
21. Wringed petioles are characteristic of
    a) *Polygonum* b) *Citrus* c) Neem d) Banana
22. The triploid number of chromosomes of the first taxon in 10 times more than the haploid number of chromosomes of the second taxon, while the diploid number of the third taxon is six time more than the haploid number of the fourth taxon. Which one of the following shows the ascending order of the number of chromosomes in their respective endosperm?
    a) Oryza-Allium-Saccharum-Nicotiana b) Allium-Oryza-Nicotiana-Saccharum
    c) Nicotiana-Saccharum-Oryza-Allium d) Saccharum-Oryza-Nicotiana-Allium
23. The scutellum observed in a grain of wheat or maize is comparable to which part of the seed in other monocotyledons?
    a) Cotyledon b) Endosperm c) Aleurone layer d) Plumule
24. *Colchicum autumnale* belongs to
    a) Solanaceae b) Fabaceae c) Liliaceae d) Malvaceae
25. Clinging roots are found in
    a) Orchids b) *Trapa* c) *Podostemon* d) *Screwpine*
26. Single-seeded winged fruits is called
    a) Achene b) Cypsella c) Samara d) Caryopsis
27. The family containing mustard and its main characters are
    a) Brassicaceae - Tetramerous flowers, six stamens, bicarpellary gynoecium, siliqua type fruit
    b) Brassicaceae - Pentramerous flowers, many stamens, pentacarpellary gynoecium, capsule type fruit
    c) Solanaceae – Pentamerous flowers, five stamens, bicarpellary gynoecium berry type fruit
    d) Poaceae – Trimerous flowers, three stamens, monocarpellary gynoecium, caryopsis type of fruit

28. Which one of the following floral characters, is shared by *Ruscus* and ray florets of *Tridax*?
    a) Nature of perianth b) Unisexuality c) Zygomorphy d) Number of stigmas
29. Identify the types of roots in the diagram *A* and *B*



    a) A-Fibrous; B-Tap
    b) A-Adventitious; B-Fibrous
    c) A-Fibrous; B-Adventitious
    d) A-Tap; B-Fibrous
30. In a flowering plant, archesporium gives rise to
    a) Wall and the tapetum b) Only tapetum and sporogenous cells
    c) Only the wall of the sporangium d) Both wall and the sporogenous cells
31. The fruit which develops from inflorescence is called
    a) Achene b) Berry c) Etaerio d) Composite fruit
32. Caryopsis is found in
    a) Sunflower b) Maize c) Pea d) Datura
33. The floral formula $\oplus \varnothing \male K_{(5)} \overset{\curvearrowleft}{C}_{(5)} A_{(5)} \underline{G(2)}$ is that of
    a) Tulip b) Soybean c) Sunnhemp d) Tobacco
34. If a primary root continues to grow, the type of root system will be known as
    a) Secondary b) fibrous c) tap d) stilt
35. Largest flower is
    a) *Rafflesia arnoldi* b) *Helianthus annuus*
    c) *Welwitschia morabilis* d) *Nelumbo nucifera*
36. Pattern of arrangement of leaves on the stem or branches is called
    a) Phyllotaxy b) Petiole c) Stipule d) Both (a) and (b)
37. Arrangement of sepals or petals with respect to the other members of same whorl is known as
    a) Gamopetalous b) Polypetalous c) Aestivation d) Vernation
38. The reproductive unit of angiosperms is
    a) Inflorescence b) Floral buds c) Flower d) Flower meristem
39. The correct floral formula of chilli is
    a) $\oplus \varnothing \male K_{(5)} \overset{\curvearrowleft}{C}_{(5)} A_5 G_{(2)}$ b) $\oplus \varnothing \male K_{(5)} C_{(5)} A_{(5)} G_2$ c) $\oplus \varnothing \male K_5 \overset{\curvearrowleft}{C}_5 A_{(5)} G_2$ d) $\oplus \varnothing \male K_{(5)} C_5 A_5 G_{(2)}$
40. Velamen is found in
    a) *Vanda* b) *Rosa* c) *Viscum* d) *Santalum*
41. The flower shown in the adjacent diagram is



    a) Homochlamydous, unisexual and hypogynous b) Homochlamydous, bisexual epigynous
    c) Dichlamydous, bisexual and hypogynous d) Heterochlamydous, bisexual and epigynous
42. Sucking roots are present in the planet

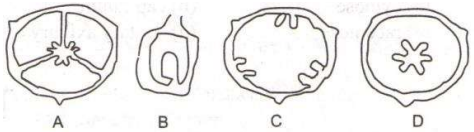
a) Betel b) *Cuscuta* c) *Mangifera* d) *Solanum*

43. The root system growing near the base of the radical in monocots is
a) Haptera b) Anchoring roots c) Clinging roots d) Seminal roots

44. The hardest part of drupe is
a) Mesocarp b) Endocarp c) Pericarp d) Epicarp

45. Cyathium and Hypanthodium inflorescence are related in having
a) Nectar glands b) Unisexual flower c) Both (a) and (b) d) None of these

46. The plant mentioned in question number 174 belongs to which family?
a) Euphorbiaceae b) Musaceae c) Solanaceae d) Fabaceae

47. 

In the diagram of types of placentation given above 'A', 'B', 'C', and 'D' respectively represent
a) Basal, axile, parietal and free central b) Free central, parietal, basal and axile
c) Axile, basal, parietal and free central d) Parietal, axile, free central and basal

48. Geocarpic fruits are produced by
a) Carrot b) Onion c) Groundnut d) Watermelon

49. Tricarpellary, syncarpous, superior ovary is seen in
a) *Allium* b) *Oenothera* c) *Solanum* d) *Dolichus*

50. Ginger multiples vegetatively by
a) Bud b) Tuber c) Stem d) Rhizome

51. Opening of a flower and drooping of a bud are examples of
a) Nyctinasy b) Hyponasty
c) Seismonasty d) Epinasty

52. Pappus is present in Compositae for
a) Air pollination b) Insect pollination c) Water pollination d) Air dispersal

53. From the options given below, find out the correct floral formula for a flower having the following characters namely actinomorphic, bisexual, five united sepals, five united petals, stamens five and epipetalous, bicarpellary, syncarpous with superior ovary
a) $\oplus\ \male\female\ K_{(5)}\ \underline{C_{(5)}}\ \underline{A_5}\underline{G}_{(2)}$ b) $\oplus\ \male\female\ K_{(5)}\ C_{(5)}\ A_{(5)}\underline{G}_{(2)}$
c) $\oplus\ \male\female\ K_{(5)}\ \underline{C_{(5)}}\ \underline{A_{(5)}}\underline{G}_{(2)}$ d) $\oplus\ \male\female\ K_{(5)}\ C_{(5)}\ A_{(5)}G_{(2)}$

54. Guttation occurs through
a) Lenticels b) Hydathodes c) Periderm d) Stomata

55. Root is distinguishable from stem in
a) Having root hairs b) Having root cap c) Absence of nodes and internodes d) All of the above

56. Monothecous anther is the characteristic of
a) Malvaceae b) Liliaceae c) Brassicaceae d) Solanaceae

57. Which of the following plants has haustorial roots?
a) Pea b) *Trapa* c) Lily d) *Cuscuta*

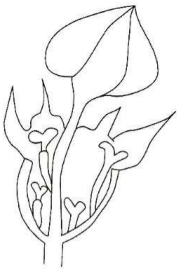
58. Type of aestivation shown by *Pisum* is
a) Imbricate b) Vexillary c) Twisted d) Quincuncial

59. Which of the following monocotyledonous seed is non-endospermic?
a) Maize b) Wheat c) Coconut d) Orchid

60. Perianth in the spikelet of jowar is represented by
a) Lodicules b) Sepals and petals c) Glumes d) Lemma and palea

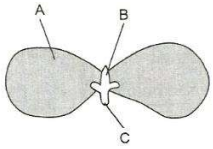
61. Tulsi belongs to family
a) Asclepiadaceae b) Labiatae c) Umbelliferae d) Rubiaceae

62. Placentation is the arrangement of
    a) Ovary in gynoecium
    b) Ovules in ovary
    c) Ovary in ovule
    d) Fused carpels in gynoecium
63. Flower is always solitary when
    a) Shoot bud transforms into flower
    b) Shoot tip transforms into flower
    c) Lateral shoot transforms into flower
    d) Horizontal shoot transforms into flower
64. Region of root present just above the root cap is called the region of
    a) Elongation
    b) Meristematic activity
    c) Root hair
    d) Maturation
65. Pineapple (ananas) fruit develops from a
    a) Unilocular polycarpellary flower
    b) Multipistillate syncarpous flower
    c) Cluster of compactly borne flowers on a common axis
    d) Multilocular monocarpellary flower
66. The morphological nature of the organ, which helps in climbing in *Cardiospermum*, is
    a) Inflorescence axis b) Leaf apex c) Terminal bud d) Axillary bud
67. Which of the following is/are not characteristic features of Asteraceae?
    I.Cypsela type of fruit
    II.Syngenesious stamens
    III.Ovary bicarpellary and superior
    IV.Placentation marginal
    V.Head type of inflorescence
    a) II, III and IV only b) III and V only c) III and IV only d) I and II only
68. When axillary buds or terminal buds of stem gets modified into woody straight and pointed structure, it is known as
    a) Thorns b) Tendrils c) Nodes d) Internodes
69. Drupe contains
    a) Stony endocarp b) Stony mesocarp c) Edible epicarp d) Edible endocarp
70. Which one of the following statements is correct?
    a) Seeds of orchids have oil-rich endosperm
    b) Placentation in primrose is basal
    c) Flower of tulip is a modified shoot
    d) In tomato, fruit is a capsule
71. A plant has an androecium with monadelphous stamens, monothecous and reniform anthers. They corolla exhibits contorted aestivation. The plant could be
    a) *Rauwolfia* b) *Vinca* c) *Nerium* d) *Hibiscus*
72. Identify from the following plant parts, the major contributors to human food?
    a) Stem b) Root c) Fruits d) Leaves
73. Scutellum in a caryopsis represents
    a) Outermost layer of endosperm
    b) A sheath that protects the radical
    c) The place where the seed is attached to rephe
    d) A cotyledon
74. A monocarpic plant is one, which
    a) Has only one carpel
    b) Flowers once in a lifetime
    c) Produces only one seed
    d) Produces only one fruit
75. Pericarp may be or can be differentiated into
    a) Epicarp b) Mesocarp c) Endocarp d) All of the above
76. Identify the type of inflorescence in the given diagram



a) Cyanthium b) Umbel c) Verticillaster d) Spikelet

77. Identify *A*, *B* and *C* in the given diagram



a) A-Plumule, B-Cotyledon, C-Radicle b) A- Radicle, B-Cotyledon, C-Plumule
c) A-Cotyledon, B-Plumule, C-Radicle d) A-Cotyledon, B-Radicle, C-Plumule

78. Fruit is
a) Mature ovary developed before fertilisation
b) Ripened ovary developed before fertilisation
c) Ripened ovary developed after fertilisation
d) Mature undeveloped ovary

79. Flowers are zygomorphic in
a) Gulmohur b) Tomato c) Datura d) Mustard

80. Pneumatophores are positively
a) Geotropic b) Phototropic c) Aerotropic d) Rheotropic

81. Leaf having completely divided lamina broken up into direct segment or leaflets is called
a) Petiole b) Phyllotaxy c) Compound leaf d) Simple leaf

82. The smallest Angiospermic flower is
a) *Wolffia* b) *Ranunculus* c) *Rafflesia* d) *Stellaria*

83. Fibrous root system originates from the base of
a) Root b) Stem c) Leaves d) Lamina

84. Stilt roots originate from the nodal part of
a) Stem b) Secondary root c) Leaf d) Primary root

85. The inflorescence in *Ocimum* is
a) Cyathium b) Verticillaster c) Hypanthodium d) Raceme

86. The leaves in *Utricularia* plant are modified into
a) Hooks b) Tendrils c) Bladders d) Pitchers

87. Inflorescence is the arrangement of
a) Leaves on the floral axis b) Buds on the floral axis
c) Flowers on the floral axis d) Petioles on the floral axis

88. In the flowers of a plant, the ovarian part is fused, but styles and stigmas are free. Its ovary becomes unilocular due to breakdown of partition wall and the ovules are attached to a central axis. Identify the plant.
a) *Dianthus* b) *Abutilon* c) *Nymphaea* d) *Michelia*

89. At the two ends of the embryonical axis
a) Radicle is present b) Plumule is present c) Both (a) and (b) d) None of these

90. Pneumatophores are present in
a) Mangroves b) Xerophytes c) Hydrophytes d) Lithophytes

91. Cuticle is absent in
a) Mesophytes b) young roots c) mature stems d) Leaves

92. Identify the mismatch among the following pairs of trees and families.

a) Psidium gujava - Myrtaceae b) Swietenia mahogni - Meliaceae
c) Pistacia vraa - Anacardiaceae d) Murraya koenigii - Meliacae

93. Tallest angiosperm is
a) *Eucalyptus* b) Red wood tree c) Oak tree d) *Pinus*

94. The underground stem that has contractile roots, is
a) Rhizome b) Corm c) Stem tuber d) Bulb

95. When gynoecium is present in the topmost position of thalamus, the flower is known as
a) Inferior b) Epigynous c) Perigynous d) Hypogynous

96. Which is odd one?
a) China rose b) Maize c) Mango d) Sunflower

97. Insectivore plants such as pitcher plant, venus fly trap have
a) Modified leaf b) Modified stem c) Modified root d) All of the above

98. Select the correct statements.
I. From the region of elongation, some of the epidermal cells from root hairs.
II. Pneumatophores are seen in *Rhizophora*.
III. Adventitious roots are seen in the banyan tree.
IV. Maize and sugarcane have prop roots.
a) I and IV b) I, III and IV c) III and IV d) II and III

99. Hesperidium of orange is a modification of
a) Berry b) Drupe c) Pome d) Aggregate fruit

100. Which of the following statements are correct?
I.When a fruit develops from the inflorescence, it is composite.
II.Mesocarp is the edible part in apple.
III.Gynobasic style is seen in *Ocimum*.
IV.Hypanthodium is a special type of inflorescence found in *Euphorbia* species.
a) I and IV are correct b) I and III are correct
c) I and II are correct d) II, III and IV are correct

101. $\underline{G}_{(2)}$ represents
a) Gynoecium, bicarpellary, apocarpous, superior
b) Gynoecium, bicarpellary, syncarpous, inferior
c) Gynoecium, bicarpellary, syncarpous, inferior
d) Gynoecium, bicarpellary, syncarpous, superior

102. Potato is a modification of
a) Stem b) Rhizome c) Root d) Leaf

103. Non-endospermic seeds are found in
a) Castor b) Rice c) Wheat d) Bean

104. Respiratory roots are found in
a) *Rhizopus* b) Orchids c) *Vallisneria* d) Mangrove plants

105. Parachute mechanism of seed dispersal occurs in
a) Sunflower b) *Antirrhinum* c) Mango d) Apple

106. I. Epicarp is thin
II. Mesocarp is fleshy and edible
III. Endocarp is strong hard
These are the probable features of
a) Coconut b) Brinjal c) Almond d) Mango

107. *Dahlia* and *Asparagus* posses
a) Stilt roots b) Fusiform roots c) Tuberous roots d) Fasciculated roots

108. Which one of the following is correctly matched pair of a certain plant family and its one example?
a) Malvaceae-Cotton b) Leguminosae-Mango(or sunflower)
c) Cucurbitaceae-Orange d) Brassicaceae-Wheat

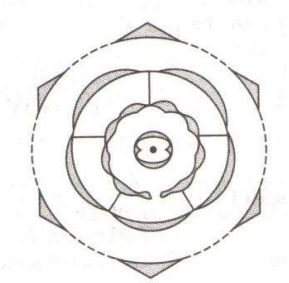
109. *Carthamus* belongs to family
a) Compositae b) Gramineae c) Liliaceae d) Solanaceae

110. Aggregate fruit develops from
a) Multicarpellary, apocarpous ovary b) Multicarpellary ovary
c) Multicarpellary, syncarpous ovary d) Monocarpellary ovary

111. Bracts enclosing a cluster of flowers are known as
a) Bracteate b) Involucre c) Petaloid d) Polysepalous

112. A fibrous root system is excellent for
a) food storage b) nitrogen fixation
c) absorbing water from deeper layer of soil d) providing good anchorage for the plant

113. The floral formula of the given floral diagram is



a) $\mathrm{Br}\,\male\,\female\,\mathrm{K}_{\text{pappus}}\mathrm{C}_{(5)}\mathrm{A}_{0}\mathrm{G}_{(\bar{2})}$ b) $\mathrm{Br}\,\male\,\female\,\mathrm{K}_{\text{pappus}}\overline{\mathrm{C}_{(5)}\mathrm{A}_{(5)}}\mathrm{G}_{(1)}$
c) $\mathrm{Br}\,\male\,\female\,\mathrm{K}_{\text{pappus}}\overline{\mathrm{C}_{(5)}\mathrm{A}_{(5)}},\mathrm{G}_{(\bar{2})}$ d) $\mathrm{Br}\,\male\,\female\,\mathrm{K}_{\text{pappus}}\overline{\mathrm{C}_{(5)}\mathrm{A}_{(5)}},\mathrm{G}_{(2)}$

114. Lateral branches with short internodes and each nodes bearing a rosette of leaves above and a tuft of roots below is found in aquatic plants like *Pistia* and *Eichhornia*. These lateral branches are called
a) Suckers b) Offsets c) Stolons d) Rhizome

115. Cereals mostly belongs to the family
a) Cruciferaceae b) Poaceae c) Brassicaceae d) Asteraceae

116. Edible part if mango is
a) Endocarp b) Receptacle c) Epicarp d) Mesocarp

117. Edible part of tomato is
a) Epicarp b) Pericarp and placenta
c) Mesocarp d) Thalamus

118. In banana, which of the following part is edible?
a) Epicarp b) Mesocarp c) Endocarp d) Both (a) and (c)

119. Sorosis is found in
a) Jack fruit b) Mulberry c) Fig d) Both (a) and (b)

120. Ovary is half-inferior in the flowers of
a) Guava b) Plum c) Brinjal d) Cucumber

121. In *Amorphophallus*, vegetative reproduction occurs through
a) Rhizome b) Corm c) Spores d) Conidia

122. Flowers, in which only one set of essential organ is present are said to be
a) Bisexual b) Monoecious c) Dioecious d) Unisexual

123. Which one of the following conditions is seen in the roots of a plant having submerged assimilatory roots and spongy petioles?
a) Triarch b) Monarch c) Tetrarch d) Diarch

124. How many types of inflorescence are present in angiosperm depending on whether the apex gets converted into a flower or continuous to grow?
a) Three type b) Four type c) Five type d) Two type

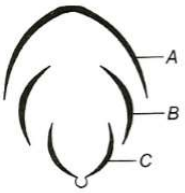
125. Which one of the following families shoes both freedom and fusion in four successive whorls of the flower from exterior in different members?

a) Malvaceae b) Solanaceae c) Asteraceae d) Liliaceae

126. Which of the following pairs is not correct?
a) Corymb-Candytuft b) Capitulum-Sunflower
c) Catkin-Mulberry d) Raceme-Wheat

127. Haustoria are found in
a) *Cuscuta* b) *Vanda* c) *Heritiera* d) *Dahlia*

128. Identify the type of petals in the given diagrams (A, B and C)



a) A-Wings, B-Keel, C-Standard
b) A-Keel, B-Wings, C-Standard
c) A-Standard, B-Wings, C-Keel
d) A-Standard, B-Keel, C-Wings

129. Regions of root from the root tip to base are
a) Region of maturation → Region of elongation → Region of meristematic activity
b) Region of elongation → Region of maturation → Region of meristematic activity
c) Region of meristematic → Region of elongation → Region of maturation
d) Region of dividing → Region of maturation → Region of elongation

130. Endosperm is consumed by developing embryo in the seed of
a) Coconut b) Castor c) Pea d) Maize

131. $\oplus\ ♂♀ P_{3+3}$ or $(3+3)A_{3+3}\ \underline{G}_{(3)}$ is the floral formula of
a) Malvaceae b) Solanaceae c) Cruciferae d) Liliaceae

132. Which of the following families has the floral formula $K_{(5)}C_{(5)}A_{(\infty)}\underline{G_{(5)}}$?
a) Compositae b) Cruciferae c) Leguminosae d) Malvaceae

133. Seedless banana is
a) Parthenocarpic fruit b) Multiple fruit c) Drupe fruit d) True fruit

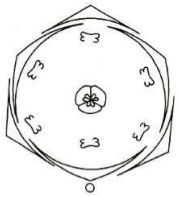
134. The bladder of *Utricularia* and pitchers of *Nepenthes* are modification of
a) Stems b) Leaves c) Roots d) Flowers

135. The main function (s) of root is
a) Absorption of water and minerals
b) To provide proper anchorage of plant
c) To store reserve food material and synthesis of plant growth regulators
d) All of the above

136. Examples of drupe fruit is/are
a) Mango b) Coconut c) Both (a) and (b) d) None of these

137. The plumule and radicle are enclosed in sheath which are called
a) Aleurone layer, scutellum b) Aleurone layer, coleoptile
c) Aleurone layer, coleorhiza d) Coleoptile, coleorhiza

138. Diagram belongs to



a) Coffee plant (Solanaceae) b) Vinea plant (Rutaceae)

c) Potato plant (Solanaceae) d) Onion plant (Liliaceae)

139. The reticulate venation is shown by
I. *Smilax* (monocot) II. *Colocasia* (monocot)
III. Gram (dicot)
Select the correct combination from the given options
a) I and II b) II and III c) III and I d) I, II and III

140. Nutrition is shown by
a) Root b) Stem c) Tendril d) None of these

141. 

The above inflorescence is a/an
a) Cyathim b) Dichasial cyme c) Umbel d) Panicle

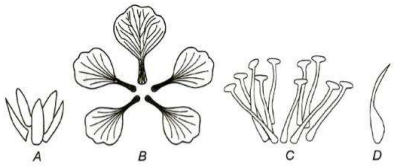
142. Perianth is the condition in which
a) Calyx and corolla are fused b) Calyx is present but corolla is absent
c) Corolla is present but calyx is absent d) Calyx and corolla are in distinct

143. Identify the correct order of the following four zones in the root from apex to base.
I. Mineral absorption zone
II.Meristematic zone
III.Maturation zone
IV.Water absorption zone
a) II, III, IV and I b) IV, III, II and I c) II, IV, I and III d) I, II, IV and III

144. Study of fruits is called
a) Palynology b) Pomology c) Embryology d) Morphology

145. Fleshy fruits with stony endocarp are called
a) Capsules b) Berries c) Pomes d) Drupes

146. Identify flower parts *A* to *D* in the given diagrams correctly

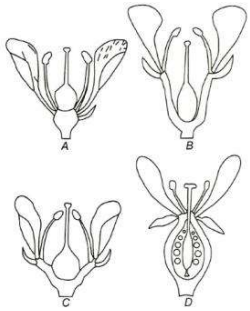


a) A-Corolla, B-Calyx, C-Androecium, D-Gynoecium
b) A-Calyx, B-Corolla, C-Androecium, D-Gynoecium
c) A-Calyx, B-Corolla, C-Gynoecium, D-Androecium
d) A-Corolla, B-Calyx, C-Gynoecium, D-Androecium

147. Which of the following plants has the floral characters like zygomorphic flower, vexillary aestivation, diadelphous androecium and marginal placentation?
a) *Pisum* b) *Belladonna* c) *Brinjal* d) *Asparagus*

148. Leaf blade is spinous in case of
a) *Nerium* b) *Ziziphus* c) *Argemone* d) *Cannabis*

149. Identify the position of gynoecium in the given diagrams *A* to *D*



a) A-Perigynous, B-Perigynous, C-Hypogynous, D-Epigynous
b) A-Epigynous, B-Perigynous, C-Hypogynous, D-Perigynous
c) A-Hypogynous, B-Perigynous, C-Perigynous,D-Epigynous
d) A-Hypogynous, B-Epigynous, C-Perigynous, D-Perigynous

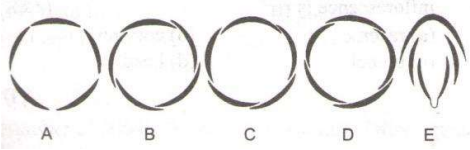
150. In floral formula, Br stands for
a) Bracteate b) Bracteolate c) Bearing flower d) Bud

151. *Viscum* is a
a) Total root parasite b) Total stem parasite
c) Partial root parasite d) Partial stem parasite

152. Generally, the parallel venation is found in
a) Gymnosperm b) Pteridophytes c) Monocotyledons d) Dicotyledons

153. Main axis continues to grow, the flowers are borne laterally in acropetal succession. This is a characteristic of which type of inflorescence?
a) Cymose b) Racemose c) Either (a) or (b) d) Both (a) and (b)

154. The following diagrams represent the types of aestivation in corolla. Identify the correct combination of labeling.



a) A-Valvate, B-Twisted, C-Vexillary, D-Imbricate
b) A-Valvate, B-Vexillary, C-Twisted, D-Imbricate
c) A-Vexillary, B-Imbricate C-Twisted, D-Valvate,
d) A-Valvate, B-Twisted, C-Imbricate D-Vexillary

155. I. Petals
II. Usually brightly coloured
III. May be free
IV. May be fused
Features given above represents
a) Calyx b) Corolla c) Sepals d) Androecium

156. Edible part of the apple is
a) Mesocarp b) Calyx c) Thalamus d) Pericarp

157. Tuberous roots are found in
a) *Beta vulgaris* b) *Daucus carota* c) *Ipomoea batatas* d) *Raphanus sativus*

158. Capitulum inflorescence is found in
a) Compositae (Asteraceae) b) Cruciferae (Brassicaceae)
c) Solanaceae d) Malvaceae

159. Floating roots are the characteristic feature of
a) *Viscum* b) *Cuscuta* c) *Vanda* d) *Jussiaea*

160. Which of the following are floral characters of Malvaceae?
a) Pedicellate, bracteates, hermaphrodite, tetramerous, actinomorphic complete and superior ovary

b) Compound spike, flowers bracteates, bracteolate, incomplete, bi or unisexual and hypogynous
c) Pedicellate, hermaphrodite, zygomorphic, complete and superior ovary
d) Jointed pedicel, bracteate, bracteolate, hermaphrodite, pentamerous, actinomorphic, complete and superior ovary

161. Inflorescence axis is called
a) Rachis b) Pedicel c) Petiole d) Peduncle

162. Tetradynamous condition is found in
a) *Hibiscus rosa-sinensis* b) *Petunia hybrid*
c) *Helianthus annuus* d) *Brassica campestris*

163. The photosynthetic or assimilatory roots are observed in
a) Banyan b) *Vanda* c) *Cuscuta* d) *Tinospora*

164. Which of the following represents the floral characters of Liliaceae?
a) Six tepals, zygomorphic, six stamens, bilocular ovary, axile placentation
b) Tetramerous, actinomorphic, polyphyllous, unilocular ovary, axile placentation
c) Trimerous, actinomorphic, polyandrous, superior ovary, axile placentation
d) Bisexual, zygomorphic, gomophyllous, inferior ovary, axile placentation

165. Gynobasic style is the characteristic features of
a) Malvaceae b) Lamiaceae c) Ranunculaceae d) Brassicaceae

166. Uniparous, biparous and multiparous systems of branching are found respectively in
a) *Mirabilis*, *Datura* and vine b) *Saraca*, *Mirabilis* and *Euphorbia*
c) Vine, *Polyalthia* and *Saraca* d) *Casuarina*, *Saraca* and *Croton*

167. Smallest region of the root is
a) Root cap b) Region of elongation
c) Region of meristematic activity d) Region of maturation

168. Prop roots are the modification for
a) Support b) Respiration c) Storage food d) Increasing mass

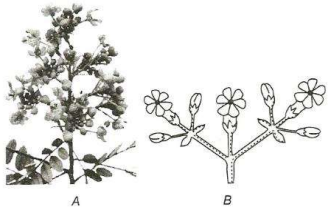
169. Which of the following has epiphytic features and aerial and flattened photosynthetic roots, without formal organization of stem and leaves?
a) *Tinospora* b) *Trapa* c) *Taeniophyllum* d) *Vanda*

170. Parts of the plants were observed. Structure-A develops aerially and produces roots when comes in contact with the soil. Structure-B develops from underground part of the stem, grow obliquely, becomes aerial and produces roots on its lower surface. Identify, respectively the structure of A and B.
a) Sucker, stolon b) Stolon, runner c) Stolon, sucker d) Runner, stolon

171. Trimerous flower, superior ovary and axile placentation is characteristics of
a) Liliaceae b) Cucurbitaceae c) Solanaceae d) Compositae

172. The capitulum type of inflorescence is found in
a) Marigold b) *Salvia* c) *Euphorbia* d) Jasmine

173. Identify the type of inflorescence in the given diagrams (A and B)



a) A-Racemose; B-Cymose b) A-Cymose; B-Racemose
c) A-Cymose; B-Cymose d) A-Racemose; B-Racemose

174. Roots are absent in
a) *Wolffia* b) *Podostemon* c) *Pistia* d) *Lemna*

175. Primary roots and its branches constitute the
a) Tap root system b) Adventitious root system

c) Tertiary root system
d) Fibrous root system

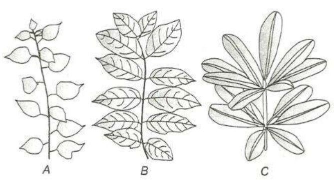
176. Two dry fruits (A & B) were observed. Both developed from unilocular ovaries of monocarpellary gynoecia. In fruit. A, pericarp and seed coat are free. It liberated the seeds only after the disintegration of the pericarp. Fruit 'B' dehisced dorsiventrally librating the seeds. In the following, the former in the pair represents 'A' and latter 'B'. to which types of fruits 'A' and 'B' respectively belong?
a) Achene and legume
b) Nut and follicle
c) Cypsella and siliqua
d) Pyxidium and septicidal capsule

177. In china rose, the inflorescence is
a) Cymose
b) Capitulum
c) Racemose
d) Solitary axillary

178. In which of the following aestivation of sepal's/petals one margin covers the other and its margin is covered by previous one?
a) Valvate
b) Twisted
c) Imbricate
d) Quincuncial

179. Which of the following two are the resultant of stipule modifications?
I.Spines in *Ziziphus*.
II.Tendrils in *Smilax*.
III.Tendrils in *Nepenthes*.
IV.Spines in *Argemone*.
V.Thorns in *Bougainvellea*.
a) I and III
b) I and II
c) II and V
d) III and V

180. Identify the type of phyllotaxy in the given diagrams (A, B and C)



a) A-Whorled, B-Opposite, C-Alternate
b) A-Whorled, B-Alternate, C-Opposite
c) A-Alternate, B-Opposite, C-Whorled
d) A-Alternate, B-Whorled, C-Opposite

181. When stigma shows feathery appearance, it is
a) Plumose
b) Cymose
c) Globulose
d) Racemose

182. The fruit developed from the single ovary is said to be
a) Composite type
b) Simple type
c) Aggregate type
d) None of these

183. Which of the following is the modification of leaf?
a) Cladode
b) Phyllode
c) Corm
d) Phylloclade

184. Arrangements of veins and the veinlets in the lamina of leaf is termed as
a) Phyllotaxy
b) Inflorescence
c) Venation
d) Petioles

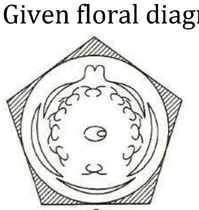
185. Aleurone layer is rich in
a) Lipid
b) Starch
c) Protein
d) Fatty acid

186. Ebr Ebr $⚥ K_{(5)} C_{(5)} A_5 \underline{G}_{(2)}$ is the floral formula of
a) Solanaceae
b) Asteraceae
c) Malvaceae
d) Cruciferae

187. Cyathium inflorescence is found in
a) *Morus*
b) *Dorstenia*
c) *Ficus*
d) *Euphorbia*

188. Cereals are mostly belong to family
a) Cruciferae
b) Brassicaceae
c) Poaceae
d) Asteraceae

189. Given floral diagram represents



a) Compositae family b) Malvaceae family c) Cruciferae family d) Leguminosae family

190. Function of obturator on micropyle is to
a) Obstruct the path
b) Direct the growth of pollen tube
c) Help in fusion
d) Dissolve the wall of pollen tube

191. Perianth is represented by
a) Glumes b) Lemma c) Lodicules d) Palea

192. Radish is modified root and an example of
a) Napiform root b) Fusiform root c) Conical d) Tuberous root

193. I. In dicotyledonous seeds, cotyledons are often fleshy and full of reserve food
II. Generally, monocotyledonous seeds are endospermic
III. Generally, dicotyledonous seeds are non-endospermic
IV. Most of the monocotyledonous seeds have fleshy cotyledons
Select the correct statements
a) All except I b) All except II c) All except III d) All except IV

194. Potato family is called
a) Cruciferae b) Brassicaceae c) Solanaceae d) Poaceae

195. Epipetalous or epiphyllous condition is shown by
a) $\widehat{CA}$
b) $\widehat{PA}$
c) (a) or (b)
d) Both (a) and (b)

196. Rhizome, which grows vertically upwards are
a) Corms b) Stolon c) Bulbils d) Root stock

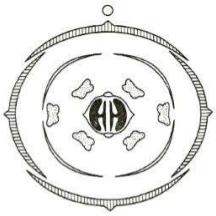
197. The existence of two types of leaves in the same plant, is called
a) Phyllody b) Phylloclade c) Heterophylly d) Heterosis

198. Most of the economically important fibre yielding plants belong to family
a) Malvaceae b) Solanaceae c) Cruciferae d) Poaceae

199. Spadix is an inflorescence found only in
a) Monocots b) Dicots c) Both (a) and (b) d) None of these

200. Phylloclades are
a) Green, photosynthetic, succulent stems of indefinite growth
b) One internode long stems
c) Leaf modifications
d) None of the above

201. Identify the family represented in given floral diagram



a) Brassicaceae b) Poaceae c) Asteraceae d) Fabaceae

202. Bright colour of petals is due to presence of
a) Chloroplast b) Anthocyanin c) Chromoplast d) Leucoplast

203. Gynandrous condition shows
a) Adhesion of stamens with petals
b) Adhesion of stamens with carpel
c) Stamens are united throughout their whole length
d) All anthers are united except filament

204. The direct elongation of radicle leads to the formation of

a) Stem b) Primary root c) Secondary root d) Tertiary root

205. I. Members of calyx are called ...A... .
II. United members of calyx are called ...B... .
III. Free members of calyx are called ...C... .
a) A-petals, B-gamosepalous, C-polyseptalous
b) A-sepals, B-gamosepalous, C-polysepalous
c) A-sepals, B-polysepalous, C-gamosepalous
d) A-petals, B-polysepalous, C-gamosepalous

206. Name the type of aestivation when sepals or petals in a whorl just touch one another at the margin without overlapping
a) Twisted aestivation b) Valvate aestivation
c) Imbricate aestivation d) Vexillary aestivation

207. Pome fruit is found in
a) Mango b) Apple c) Litchi d) Peach

208. What type of placentation is seen in sweet pea?
a) Basal b) Axile c) Free central d) Marginal

209. Vessels and companion cells are characteristic of
a) Angiosperm b) Gymnosperm c) Pteridophyta d) Fern

210. Which of the following is not a character of a monocot?
a) Presence of a single seed leaf b) Endosperm present in the mature seed
c) Leaves with parallel veins and smooth edges d) Floral parts as multiples of four or five

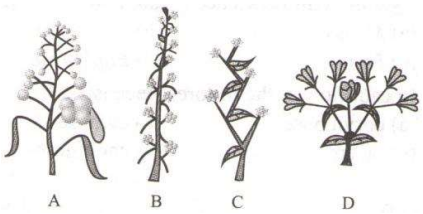
211. In floral formula, 'K' and 'C' stands for
a) K-Corolla, C-Calyx b) K-Calyx, C-Corolla c) K-Calyx, C-Calyx d) K-Corolla, C-Corolla

212. Drupes are called stony fruits because they have hard
a) Epicarp and mesocarp b) Mesocarp
c) Mesocarp and endocarp d) Endocarp

213. Study the following statements.
I.Food is stored in the leaf bases.
II.Buds develop from leaf apices.
III.Presence of tunicated bulb.
Identify the correct combination with reference to *Scilla*.
a) I, II and III are correct b) I and II are correct c) I and III are correct d) II and III are correct

214. Identify the wrong expression from the following statements.
a) A plant that bears male, female and bisexual flowers is polygamous
b) An actinomorphic flower can be dissected into two equal halves from any plane
c) Superior ovary is found in hypogynous flowers
d) That side of the flower towards the bract is called the posterior side

215. Find out the correct sequence of labeling of diagram given below.



a) A-Spike B-Raceme C-Dichasial cyme D-Monochasial cyme
b) A-Raceme B-Spike C-Monochasial cyme D-Dichasial cyme
c) A-Dichasial cyme B-Monochasial cyme C-Raceme D-Spike
d) A-Spike B-Dichasial cyme C-Monochasial cyme D-Raceme

216. 120° phyllotaxy is found in
a) Distichous condition b) Tristichous condition

c) Monostichous condition d) None of the above

217. The binomial of sunnhemp is

a) *Crotalaria juncea* b) *Erythrina indica* c) *Glycine max* d) *Arachis hypogeal*

218. In which of the following types of fruits, dorsiventral dehiscence takes place?

I. Legume
II. Follicle
III. Siliqua
IV. Capsule

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

219. Green stems of unlimited growth, which have taken over the function of photosynthesis is called

a) Phylloclades b) Tendrils c) Modified shoot d) Inflorescence

220. Desert grasses often roll their leaves due to presence of

a) Oily surface b) Bulliform cells c) Spines d) None of these

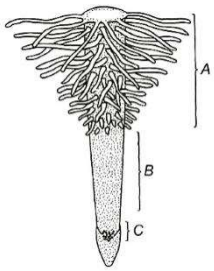
221. Which of the following pairs of family's posses pollinia?

a) Orchidaceae and Apocynaceae b) Orchidaceae and Asclepiadaceae
c) Asclepiadaceae and Mimosaceae d) Asclepiadaceae and Apocynaceae

222. In Nepenthes (pitcher plant), pitcher is the modification of

a) Leaf petiole b) Leaf base c) Leaf lamina d) All of these

223. Identify *A*, *B* and *C* in the given diagram



a) A-Region of maturation, B-Region of elongation, C-Region of meristemastic activity b) A-Region of elongation, B-Region of maturation, C-Region of meristematic activity
c) A-Region of meristematic, B-Region of maturation, C-Region of elongation activity d) A-Region of meristematic, B-Region of elongation, C-Region of maturation

224. *Rauwolfia serpentina* belongs to family

a) Apocynaceae b) Solanaceae c) Liliaceae d) Fabaceae

225. Family-Podostemaceae is placed under the series

a) Multivulatae Aquaticae b) Microembryeae
c) Daphnales d) Unisexuales

226. The flower, in which the gynoecium occupies the highest position on the thalamus leaving other parts below is called

a) Hypogynous b) Perigynous c) Epigynous d) None of these

227. Stem is modified into cladode in

a) Casuarina b) Asparagus c) Opuntia d) Euphorbia

228. A root was described as adventitious root because it

a) Arose from plumule b) Was used variously for storage of food
c) Was swollen d) Was growing in marshy place

229. Commercial banana (Musa paradisica) is a

a) Haploid b) Diploid c) Triploid d) Tetraploid

230. The leaves of *Smilax* and *Colocasia* show

a) Parallel venation b) Reticulate venation c) Forward venation d) Lateral venation

231. Select the characters, which are not applicable to the family-Solanaceae?

I.Epipetalous and syngenesious anthers
II.Bicarpellary and syncarpous ovary

III.Oblique ovary with axile placentation
IV.Stamens six, arranged in two whorls
V.Bicarpellary, syncarpous and inferior ovary
a) II and III only b) I, IV and V only c) II, IV and V only d) I and III only

232. Percentage (%) sign is used for
a) Actinomorphic flower b) Zygomorphic flower c) Incomplete flower d) Epigynous flower

233. Dry indehiscent single-seeded fruit formed from bicarpellary syncarpous inferior ovary is
a) Caryopsis b) Cypsela c) Berry d) Cremocarp

234. Which of the following have succulent root?
a) *Opuntia* b) *Aloe* c) *Agave* d) *Asparagus*

235. Modified shoots wherein the shoot apical meristem changes to floral meristem is called
a) Flower b) Inflorescence c) Shoot buds d) Both (a) and (c)

236. The plant having monadelphous stamens and axile placentation is
a) Lemon b) Pea c) Tomato d) China rose

237. Consider the following statements.
I.In racemose inflorescence, the flowers are brone in a basipetal order.
II.Epigynous flowers are seen in rose plant.
III.In brinjal, the ovary is superior.
Of these statements
a) I and II are true but III is false b) I and III are true but II is false
c) I and II are false but III is true d) I and III are false but II is true

238. In hypogeal seed germination, the structure help to push the cotyledon inside the soil is
a) Epicotyl b) Hypocotyls c) Plumule d) Radical

239. Tendrils in plants are an example of
a) Convergent evolution b) Radiation
c) Divergent evolution d) Co-evolution

240. Parachute mechanism of seed dispersal is seen in
a) Poppy b) *Helianthus* c) *Plumbago* d) Lotus

241. In which of the following, petiolar leaf tendril is found?
a) *Clematis* b) *Citrus* c) *Parkinsonia* d) *Trapa*

242. Modified underground stem is called
a) Stolon b) Offset c) Sucker d) Corm

243. Why is vivipary an undesirable character for annul crop plants?
a) It reduces the vigour of plant
b) The seeds cannot be stored under normal conditions for the next season
c) The seeds exhibit long dormancy
d) It adversely affects the fertility of the plant

244. Leaves of dicotyledon plants generally exhibits
a) Oblique venation b) Lateral venation c) Reticulate venation d) Parallel venation

245. Multicostate parallel venation of leaf is found in
a) Gras, palm b) *Dalbergia* c) *Argemone* d) *Mangifera*

246. Simple, cluster of radial leaves, stipulate and parallel venation leaves and cyme or umbel inflorescence are the characteristics of
a) Poaceae b) Liliaceae c) Asteraceae d) Fabaceae

247. In some seeds, reminants of nucellus are also persistent.
This residual, persistent nucellus is the
a) Pericarp b) Perisperm c) Chalazosperm d) Mesosperm

248. In which of the following, parthenocarpy makes no sense?
a) Bnana b) Orange c) Lemon d) Pomegranate

249. In Duranta, the nature of vasculated defensive structures represent the modification of

a) Axillary bud as in *Bougainvillea* b) Terminal bud as in *Carissa*
c) Stipules as in *Acacia* d) Apical bud as in *Artabotrys*

250. In a flower, there are five unequal petals. The posterior petal is the largest. The two anterior petals are partially fused to form a boat-shaped structure. The two lateral petals are smaller than the posterior petal. Which one of the following characters is not associated with such a flower?
a) The aestivation of the petals is descendingly imbricate
b) The odd sepal is anterior
c) The pollination is by piston mechanism
d) The number of carpels is more

251. Water and minerals absorption from soil are the function of
a) Root hair b) Root cap c) Stilt root d) Prop roots

252. Gynoecium in the members of family-Leguminosae is composed of
a) Two carpels b) One carpel c) Five carpels d) Three carpels

253. Which one of the following represents the floral characters of Poaceae?
a) Pedicellate, bracteates, bisexual, tetramerous, actinomorphic, complete and superior ovary
b) Pedicellate, bracteates, bisexual, pentamerous, zygomorphic, complete and superior ovary
c) Sessile, bracteates, bracteolate, incomplete, uni or bisexual, perianth modified into lodicules, stamens three, syncarpous, superior ovary and feathery stigma
d) Bracteate, unisexual, actinomorphic, stamens five and inferior ovary

254. In a cereal grain, the single cotyledon of embryo is represented by
a) Coleorhiza b) Scutellum c) Prophyll d) Coleoptile

255. Anthesis is a phenomenon which refers to
a) Reception of pollen by stigma b) Formation of pollen
c) Development of anther d) Opening of flower bud

256. Which of the following have double fertilization?
a) Algae b) Bryophytes c) Pteridophytes d) Angiosperms

257. Identify a pair of the following plants, which show modification of axillary buds into tendrils and hooks respectively.
I. *Hugonia*
II. *Duranta*
III. *Passiflora*
IV. *Dioscorea*
a) I and II b) II and III c) III and I d) IV and I

258. Diadelphous stamens are the characteristic features of
a) Ranunculaceae b) Fabaceae c) Poaceae d) Malvaceae

259. The aerial, short and branched roots of an autotrophic plant that provide stability, are known as
a) Lateral roots b) Haustoria c) Velamen roots d) Clinging roots

260. The flower of Hibiscus is
a) Regular, bisexual, hypogynous and incomplete b) Regular, unisexual, hypogynous and complete
c) Regular, bisexual, epigynous and complete d) Regular, bisexual, hypogynous and complete

261. Gynoecium is the
a) Female reproductive part of flower made up of one carpel
b) Female reproductive part of flower made up of many carpel
c) Female reproductive part of flower made up of two carpel
d) All of the above

262. Exstipulate leaves are present in
a) *Althea rosea* b) *Tridax procumbens*
c) *Hibiscus rosa-sinensis* d) *Tephrosia purpurea*

263. Sunflower belongs to the family

a) Liliaceae b) Asteraceae c) Cruciferae d) Fabaceae

264. Ginger multiplies vegetatively by
a) Tuber b) Corm c) Sucker d) Rhizome

265. Non-endospermous seed is
a) Bean b) Gram c) Pea d) All of these

266. Which of the following groups of plants are propagated through underground roots?
a) *Bryophyllum* and *Kalanchoe* b) Ginger, potato, onion and zimikand
c) *Pistia*, *Chrysanthemum* and pineapple d) Sweet potato, *Asparagus*, *Tapioca* and *Dahlia*

267. Flowers and lateral branches arise from the
a) Lateral buds b) Lentices c) Stomata d) Cuticle

268. In cauliflower, the inflorescence is
a) Corymbose b) Cymose c) Raceme d) Capitulum

269. The botanical name of soybean is
a) *Cajanus cajan* b) *Glycine max* c) *Glycyrrhiza glabra* d) *Abrus precatorious*

270. Empty glumes are
a) Petals b) Bracts c) Anthers d) Carpels

271. When the filaments of stamens are attached to the petals, the condition is
a) Epiphyllous b) Epipetalous c) Adelphous d) Syngenesious

272. Root apex covered by thimble-like structure called
a) Region of elongation
b) Region of maturation
c) Region of dividing
d) Root cap

273. Fabaceae
a) Was earlier called Papilionoideae b) Was a sub family of Leguminosae
c) Is distributed all over the world d) All of the above

274. Stem develops from
a) Epicotyle b) Hypocotyle c) Plumule d) Radicle

275. Juicy hair-like structures observed in the lemon fruit develop from
a) Endocarp b) Exocarp c) Both (a) and (b) d) Mesocarp

276. Which of the following represents the male reproductive organ in a flower?
a) Androecium b) Stamen c) Both (a) and (b) d) None of these

277. Plants with single whorls of perianth are places under
a) Class-Monocot, Sub-class-Monochlamydeae b) Class-Dicot, Series-Monochlamydeae
c) Class- Dicot, Subclass- Monochlamydeae d) Class-Monocot, Subclass -Gamopetalae

278. Presence of persistent calyx is a feature of family
a) Solanaceae b) Gramineae c) Malvaceae d) Compositae

279. In cymose inflorescence
a) Main axis do not terminate in a flower b) Main axis terminate in a flower
c) Main axis do not exist d) Main axis modified into flower

280. Liliaceae
a) Is commonly called lily family
b) Is a representative of monocotyledonous plants
c) Is a representative of dicotyledonous plants
d) Both (a) and (b)

281. In China rose, five carpels are fused at base. This condition is called
a) Pentacarpellary, syncarpous and pentalocular b) Pentacarpellary, apocarpous and pentalocular
c) Polycarpellary, syncarpous and pentalocular d) Pentacarpellary, syncarpous and multilocular

282. Endosperm is the result of
a) Single fertilisation b) Partial fertilisation c) Double fertilisation d) Triple fertilisation

283. Ginger is an underground stem. It is distinguished from root because it
a) Lacks chlorophyll b) Stores food
c) Has nodes and internodes d) Has xylem and vessels

284. In which plant underground stems spread to new niches and when older parts die new plants are formed?
a) *Grasses* b) Strawberry c) *Pistia* d) Both (a) and (b)

285. Which of the following plants have long slender and coiled stem tendrils developed from axillary buds?
a) Grapevine and pumpkins b) Australian *Acacia* and watermelon
c) *Bougainvillea* and cucumber d) Strawberry and grapevine

286. A raceme inflorescence of *Tamarindus* bears 15 flowers. Each fertile anther lobe of its flower contains 215 pollen grains. What would be the total number of pollen grains produced by the inflorescence?
a) 64500 b) 32250 c) 19350 d) 16125

287. Triticale is a hybrid formed from the members belonging to the following families
a) Brassicaceae and Poaceae b) Poaceae and Poaceae
c) Poaceae and Fabaceae d) Alismaceae and Poaceae

288. The fleshy receptacle of syconous of fig encloses a number of
a) Achenes b) Samaras c) Berries d) Mericarps

289. A student collected a hydrophyte with swollen petiole and with a single vascular bundle in the root. The plant which he collected., was
a) *Jussiaea* b) *Trapa* c) *Ceratophyllum* d) *Potamogeton*

290. Scar on the seed coat through which seeds are attached to the fruit is called
a) Testa b) Tegmen c) Micropyle d) Hilum

291. The condition where filaments and anthers are fused throughout entire length is
a) Synandrous b) Gynandrous c) Protandrous d) Syngenesious

292. Which of these is an example for zygomorphic flower with imbricate aestivation?
a) *Calotropis* b) Mustard c) *Canna* d) *Cassia*

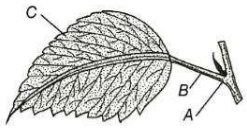
293. Select the correctly matched pair.
a) *Colchicum autumnale*- Solanaceae b) *Petunia* – Solanaceae
c) *Gloriosa* – Fabaceae d) *Trifolium* –Liliaceae

294. Leaves aries from which part of plant?
a) Rhizome b) Stem c) Internode d) Node

295. What is the type of fruit that developed from the ovary of a monocarpellate gynoecium and breaks into several one seeded parts at maturity?
a) Cremocarp b) Carcerulus c) Regma d) Lomentum

296. Whorl of small, green structures present around sunflower is
a) Involucre b) Calyx c) Epicalyx d) Leaves

297. Identify *A*, *B* and *C* in the given diagram



a) A-Leaf base, B-Petiole, C-Lamina
b) A-Leaf base, B-Lamina, C-Petiole
c) A-Lamina, B-Petiole, C-Leaf base
d) A-Lamina, B-Leaf base, C-Petiole

298. In which plant, the pneumatophores are found?
a) *Tinospora* b) *Pinus* c) *Rhizophora* d) None of these

299. Two stamens as exception in Cruciferae are found in
a) *Nastrusium* b) *Senebirea* c) *Raphanus* d) *Brassica*

300. Vivipary is seen in
a) Mangroves b) Xerophytes c) Hydrophytes d) Mesophytes

301. Number of carpels is *Sida cordifolia* is always
   a) Equal to the number of styles
   b) Equal to the number of locules
   c) Double the number of styles
   d) Half the number of locules
302. Inflorescence of *Ficus* is
   a) Raceme
   b) Spike
   c) Hypanthodium
   d) Verticillaster
303. Pineapple fruit develops from
   a) Unilocular polycarpellary flower
   b) Multipistillate syncarpous flower
   c) Multilocular monocarpellary flower
   d) A cluster of compactly born flowers on an axis
304. Mature seeds of some plant (such as gram pea and ground nut) and sperm is completely consumed by the embryo. Such seeds are called
   a) Single
   b) Albuminous
   c) Endospermic
   d) Non-endospermic
305. Which of the following is a correct statement?
   a) Orchid has palmate fleshy roots
   b) *Pandanus* has stilt roots
   c) Sweet potato has root tubers
   d) All of the above
306. Bract is a modified
   a) Petal
   b) Sepal
   c) Leaf
   d) Involucre
307. Leaf
   a) Is a lateral generally flattened structure born on the stem
   b) Is a vegetative organ for photosynthesis
   c) Originates from shoot apical meristem
   d) All of the above
308. Tobacco and Petunia belong to the family
   a) Poaceae
   b) Fabaceae
   c) Solanaceae
   d) Brassicaceae
309. Which one of the following families has unicolour superior ovary?
   a) Asteraceae
   b) Solanaceae
   c) Papaveraceae
   d) Cucurbitaceae
310. Which one of the following floral formula represents the mustard plant?
   a) $\oplus\ \male\female\ K_{2+2}\ C_4\ A_{2+4}\ \overline{G}\ (2)$
   b) $\oplus\ \male\female\ P_{3+3}\ C_4\ A_{3+3}\ \underline{G}\ (3)$
   c) $\oplus\ \male\female\ K_{(5)}\ C_{(5)}\ A_{(5)}\ \underline{G}\ (2)$
   d) $\oplus\ \male\female\ K_{2+2}\ C_4\ A_{2+4}\ \underline{G}\ (2)$
311. Inflorescence of family-Compositae is
   a) Perianth
   b) Lodicules
   c) Capitulum
   d) Hypanthodium
312. Angiosperms have dominated the land flora primarily because of their
   a) Power of adaptability in diverse habitat
   b) Property of producing large number of seeds
   c) Nature of some pollination
   d) Domestication by man
313. Which one of the flowing is a monocarpic plant?
   a) Pear
   b) *Citrus*
   c) Mango
   d) *Bambusa*
314. Stem tendrils are developed from the….. which are slender and spirally coiled
   a) Terminal buds
   b) Auxillary buds
   c) Both (a) and (b)
   d) Shoot tip
315. The anthers in Solanaceae are
   a) Monothecous, introrse
   b) Dithecous, extrorse
   c) Dithecous, introrse
   d) Monothecous, extrorse
316. In Selaginella, the adaxial outgrowth, from the base of leaf, is called
   a) Ligule
   b) Velum
   c) Rhizophore
   d) Glossopodium
317. The cloves, which are used in food preparation are
   a) Seeds
   b) Leaves
   c) Flower buds
   d) Stem tips
318. Tetradynamous stamens are found in
   a) *Chrysanthemum*
   b) *Zinnia*
   c) Poppy
   d) *Brassica*
319. The leaves are modified into spines in
   a) *Nepenthes*
   b) *Opuntia*
   c) Australian *Acacia*
   d) *Utricularia*
320. Placenta is the cushion like structure on which the

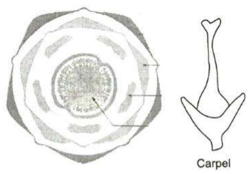
a) Ovule attached b) Ovary attached c) Seed attached d) Stamen attached

321. Arrange the following plants in the ascending order based on the number of leaflets in a leaf.
I. *Hardwickia*
II. *Gynandropsis*
III. *Marselia*
III. *Citrus*
a) I, III, II, IV b) IV, I, III, II c) IV, I, II, III d) II, IV, III, I

322. Bicarpellary, syncarpous ovary with axile placentation is seen in
a) Solanaceae b) Caesalpinaceae c) Asteraceae d) Malvaceae

323. The given formula belongs to
$Br \oplus ⚥ \ Epi_3 \ K_{(5)} C_5 \ A_{(\infty)} G_{(5)}$
a) Solanaceae b) Malvaceae c) Gramineae d) Compositae

324. Which type of placentation is found in family-Fabaceae?
a) Axile b) Marginal c) Parietal d) Basal

325. Study the given diagram


a) *Colchicum* b) Onion c) *Solanum* d) Coffee

326. The multilocular fruit, splits in middle into two halves, is
a) Porocidal b) Septicidal c) Loculicidal d) Septifragal

327. Fibrous root system is mostly found in
a) Monocot plants b) Dicot plants c) Pteridophytes d) Bryophytes

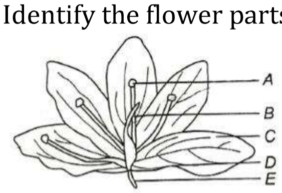
328. Tetradynamous androecium is found in
a) Mustard b) Onion c) Tomato d) Sunflower

329. A student observed 34 inflorescences in Bougainvillea and 42 inflorescences in Poinsettia. Find out the number of flowers in Bougainvillea and the number of female flowers in Poinsettia respectively.
a) 34 and 126 b) 68 and ∞ c) 204 and 164 d) 102 and 42

330. Select the wrong statement.
a) Persistent calyx is seen in Solanaceae
b) Flowers are hypogynous in Asteraceae
c) Santonin is obtained from *Artemelsia*
d) In Poaceae, perianth is represented by membranous scales called Iodicules

331. Nodes are the region of stem where
a) Roots are born b) Leaves are born c) Stilt root are born d) Prop root are born

332. Structure of leaf which provide channels of transport for water, minerals and food materials is called
a) Midrib b) Margin c) Lamina d) Veins

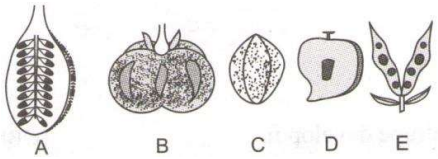
333. Identify the flower parts *A* to *E* in the given diagram


a) A-Androecium, B-Gynoecium, C-Corolla, D-Calyx, E-Pedicel
b) A-Androecium, B-Gynoecium, C-Corolla, D- Pedicel, E- Calyx
c) A-Androecium, B-Gynoecium, C-Pedicel, D-Corolla, E- Calyx
d) A-Androecium, B-Gynoecium, C-Calyx, D-Corolla, E-Pedicel

334. Whorled type of phyllotaxy is found in
a) Mustard b) China rose c) Guava d) *Alstonia*

335. Plants mentioned in previous question belongs to
a) Cruciferae b) Liliaceae c) Fabaceae d) Asteraceae

336. Which of the following correctly represents the types of fruits given?



a) A-Berry
B-Caryopsis
C-Drupe
D-Sorosis
E-Aggregate
b) B-Berry
C-Caryopsis
D-Drupe
A-Sorosis
E-Aggregate
c) B-Berry
C-Caryopsis
D-Drupe
E-Legume
A-Aggregate
d) B-Berry
C-Caryopsis
D-Drupe
A-Sorosis
E-Legume

337. Bicarpellary, syncarpous and with pseudoseptum fruit is
a) Siliqua b) Achene c) Capsule d) All of these

338. Root hairs are present on the
a) Root cap b) Region of elongation
c) Region of maturation d) Region of dividing cell

339. I. When carpels are free, they are called …A… .
II. When the carpels fused, they are called …B… .
Here, A and B refers to
a) A-syncarpous; B-apocarpous b) A-apocarpous; B-syncarpous
c) A-monocarpous; B-multicarpous d) A-multicarpous; B-monocarpous

340. Parthenocarpic tomato fruits can be produced by
a) Removing androecium of flowers before pollen grains are released
b) Treating the plants with low concentrations of gibberellic acid and auxins
c) Raising the plants from vernalised seeds
d) Treating the plants with phenylmercuric acetate

341. Petiole
a) Helps to hold the leaf blade b) Allows leaf blades to flutter wind
c) Helps in cooling the leaf d) All of the above

342. Maize grain is
a) Seed b) Embryo c) Ovule d) Fruit

343. Free central placentation is found in
a) Brassicaceae b) Caryophyllaceae c) Asteraceae d) Malvaceae

344. In a tetradynamous androecium, one of the following is seen.

a) Outer whorl of four smaller stamens and inner whorl of two larger stamens
b) Outer whorl of two larger stamens and inner whorl of four smaller stamens
c) Outer whorl of four larger stamens and inner whorl of two smaller stamens
d) Outer whorl of two smaller stamens and inner whorl of four larger stamens

345. Multicarpellary, apocarpous, gynoecium with superior ovary is characteristic feature of the family
a) Papaveraceae b) Mystaceae c) Ranunculaceae d) Rutaceae

346. The stem is the …A… part of the axis bears branches, leaves, flowers and fruits. It develops from the …B… part of embryo of germinating seeds. Complete the given statement by choosing appropriate options for A and B
a) A-descending; B-radicle b) A-radicle; B-descending
c) A-ascending; B-plumule d) A-plumule; B-ascending

347. Long filaments threads protruding at the end of a young cob of maize are
a) Anthers b) Styles c) Ovaries d) Hairs

348. Angiosperms differ from gymnosperms in
a) Seeds b) Fruits
c) Male gametophyte d) Female gametophyte

349. Sub-aerial stem modification with long internode is
a) Tuber b) Phyllode c) Phylloclade d) Runner

350. Flowers with bracts, (reduced leaf found at the base of pedicel) are called …A… and those without bracts, are called …B…
Complete the given statement by choosing appropriate options for A and B
a) A-bracteate; B-ebracteate b) A-ebracteate; B-bracteate
c) A-pinnate; B-palmitate d) A-palmitate; B-pinnate

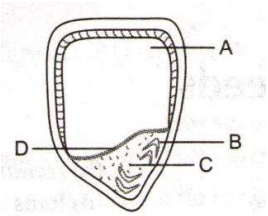
351. A drupe develop in
a) Wheat b) Pea c) Tomato d) Mango

352. Which of the following represents the condition seen in the family-Compositae?
a) Superior ovary, Syngenesious and single basal ovule
b) Inferior ovary, monoadelphous and basal placentation
c) Inferior ovary, Syngenesious and axile placentation
d) Syngenesious, basal placentation and epigynous

353. A flower which can be divided into equal vertical halves by more than one plane of division is
a) Actinomorphic b) Zygomorphic c) Heteromorphic d) Cyclic

354. An example of a seed with endosperm, perisperm and caruncle is
a) Cotton b) Coffee c) Lily d) Castor

355. The diagram of the section of a maize gain is given blow. Identify the parts labeled A, B, C, and D.



A B C D
a) Endosperm Coleoptile Scutellum Aleurone layer
b) Cotyledon Coleoptile Scutellum Epithelium
c) Endosperm Coleoptile Scutellum Epithelium
d) Endosperm Coleoptile Scutellum Radicle

356. Lomentum is a kind of
a) Inflorescence b) Plant c) Fruit d) Insect

357. I. Standard petals
II. Wing petal
III. Keel petals
Above petals are found in

a) Valvate aestivation
b) Twisted aestivation
c) Imbricate aestivation
d) Vexillary aestivation

358. In the members of family-Malvaceae, anthers are described as
a) Diadelphous and dithecous
b) Diadelphous and monothecous
c) Monodelphous and monothecous
d) Monadelphous and dithecous

359. *Cinchona officinalis* belongs to family
a) Cruciferae
b) Malvaceae
c) Rubiaceae
d) Leguminosae

360. Colchicine
I. is obtained from *Colchium autumnale*
II. is a cytokinesis inhibitor
III. induce polyploidy
IV. is obtained from Fabaceae family
V. Floral formula = $\oplus\ \overset{\varphi}{+} P_{3+3}A_{3+3}\underline{G}_3$
Which are correct statement?
a) I, II and III
b) III, V and IV
c) II, III and IV
d) V, II and I

361. A phyllode is a modified
a) Leaf
b) Stem
c) Branch
d) Root

362. Modification of petiole into leaf-like structure is called
a) Cladode
b) Phylloclade
c) Phyllode
d) Pistillode

363. Some feature of plant leaves are
a) Hair on the lower surface and waxy cuticle
b) Hair on the upper surface and no cuticle
c) Epidermis without stomata
d) Presence of endodermis and casparian strips

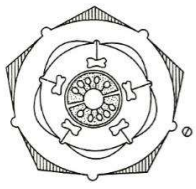
364. Which of the following is a fatty oil yielding plant?
a) Sunflower
b) *Acacia*
c) *Butea*
d) *Casuarina*

365. The order of opening of flower parts from the periphery towards the centre, is called
a) Acropetal
b) Centripetal
c) Centrifugal
d) Basipetal

366. In which of the following fruits, the edible part is the aril?
a) Apple
b) Pomegranate
c) Orange
d) Litchi

367. China rose have five fused carpals at the base. This condition is called
a) Pentacarpellary, syncarpous, monoadel pherus
b) Pentacarpellary, apocarpous, monoadel pherus
c) Polycarpellary, syncarpous, monoadel pherus
d) Pentacarpellary, syncarpous, monoadel pherus

368. Given floral diagram represents



a) Solanaceae
b) Fabaceae
c) Liliaceae
d) Musaceae

369. Swollen leaf base is called
a) Lamina
b) Petiole
c) Pulvinus
d) Leaf blade

370. The botanical name of cabbage is
a) *Brassica oleracea* var. *botrytis*
b) *Brassica oleracea* var. *capitata*
c) *Brassica oleracea* var. *gongylodes*
d) *Brassica compestris*

371. Jowar belongs to family
a) Glumaceae
b) Gramineae/Poaceae
c) Asteraceae/Compositae
d) Malvaceae

372. In plants like mint and jasmine, a selender lateral branch arises from the base of the main axis and after growing aerially for sometimes, arch downwards to touch the ground. This slender branch is called
a) Sucker b) Stolon c) Offset d) Scramblers

373. Expanded green stem of *Opuntia* is called
a) Phylloclade b) Tendril c) Bulbs d) Cladode

374. When leaflets are even in number they are called ...A... .
When leaflets are odd in number called they are ...B.. .
Here A and B refers to:
a) A-Paripinnate (tamarind); B-Imparipinnate (rose) b) A-Paripinnate (rose); B-Imparipinnate (tamarind)
c) A-Imparipinnate (tamarind); B-Paripinnate (rose) d) A-Imparipinnate (rose); A-Paripinnate (tamarind)

375. The difference in phloem of gymnosperms and angiosperms is due to
a) Parenchyma b) Sieve cell c) Companion cell d) Fibres

376. China rose is called shoeflower because
a) The flowers are showy b) The flowers produce black dye
c) The flowers are shoe shaped d) Petals are used for blackening the shoes

377. Tetradynamous condition is found in
a) Asteraceae b) Malvaceae c) Papilionatae d) Brassicaceae

378. Sunflower belongs to
a) Asteraceae b) Fabaceae c) Musaceae d) Euphorbiaceae

379. The fleshy fruits with hard and stony endocarp are called
a) Drupe b) Berry c) Pepo d) Pome

380. Ruminate endosperm is found in
a) Cruciferae b) Asteraceae c) Euphorbiaceae d) Annonaceae

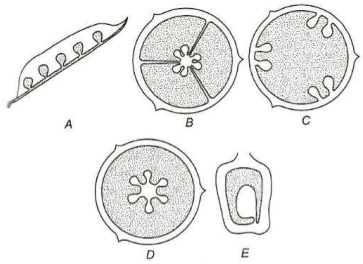
381. At root tip, number of divisions to produce 100 cells, is
a) 25 b) 50 c) 99 d) 100

382. Fruit formed without fertlisation of ovary is called
a) Cypsela fruit b) Parthenocarpic fruit
c) Drupe fruit d) Pome fruit

383. Leaf base expands into sheath covering the stem partially or wholly.
This is the characteristic of
a) Dicot b) Monocot c) Pteridophytes d) Gymnosperm

384. The most advanced family is
a) Cruciferae b) Cucurbitaceae c) Compositae d) Euphorbiaceae

385. Identify the types of placentation in the given diagrams (*A* to *E*)



a) A-Marginal, B-Axile, C-Parietal, D-Free central, E-Basal
b) A-Marginal, B- Basal, C-Parietal, D-Free central, E-Axile
c) A-Parietal, B-Basal, C-Marginal, D-Free central, E-Axile
d) A-Parietal, B-Axile, C-Marginal, D-Free central, E-Basal

386. The technical term used for the androecium in a flower of China rose (*Hibiscus rosa sinensis*), is
a) Monodelphous b) Diadelphous c) Polyandrous d) Polyadelphous

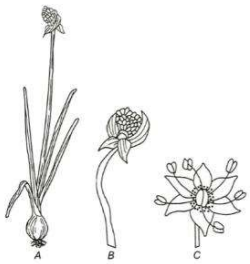
387. An inflorescence having a number of achlamydeous male flower surrounding a single achlamydeous female flower is
a) Verticillaster b) Cyathium c) Spadix d) Hypanthodium

388. $\underline{G}$ and $\overline{G}$, respectively stands for
   a) Superior ovary, inferior ovary
   b) Inferior ovary, superior ovary
   c) Superior ovary, intermediate ovary
   d) Intermediate ovary, inferior ovary

389. Root hairs are found
   a) In the zone of elongation
   b) Adventitious roots
   c) On the root cap
   d) In the zone of maturation

390. Pericarp and placenta are edible part of simple fleshy berry fruit
   a) Jack fruit b) Banana c) Tomato d) Date palm

391. The given diagram belongs to



   The diagram shown is the
   a) Onion plant b) Garlic plant c) Potato plant d) Lily plant

392. Offset is a type of stem present in
   a) *Pistia* b) *Colocasia* c) *Oxalis* d) Potato

393. Ginger is an example of underground modified stem called
   a) Rhizome b) Corm c) Tuber d) Bulb

394. The *Orobanche* plant is
   a) Partial stem parasite b) Total root parasite c) Symbiont d) Total stem parasite

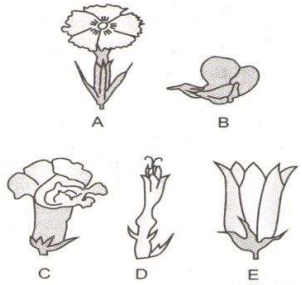
395. Which one of the following is an example for sub-aerial modification of stem?
   a) *Agave* b) *Oxalis* c) *Asparagus* d) *Tridax*

396. In which plant, the fruit is a drupe, seed coat is thin, embryo is inconspicuous and endosperm is edible?
   a) Groundnut b) Wheat c) Apple d) Coconut

397. Corolla aestivation showing two external, two internal and one partially external and internal sepals. The condition is
   a) Valvate b) Twisted c) Quincuncial d) Vexillary

398. Staminode is
   a) Sterile stamen b) Fertile stamen c) Redumentary stamen d) Developed stamen

399. The correct sequence of types of corolla in the figure given is



   a) A-Caryophyllaceous
      B-Papilionaceous
      C-Personate
      D-Tubular
      E-Bell-shaped
   b) A-Papilionaceous
      B-Personate
      C-Tubular

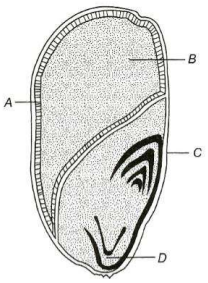
D-Bell-shaped
E-Caryophyllaceous

c) A-Personate
B-Papilionaceous
C-Caryophyllaceous
D-Bell-shaped
E-Tubular

d) A-Caryophyllaceous
B-Personate
C-Papilionaceous
D-Tubular
E-Bell-shaped

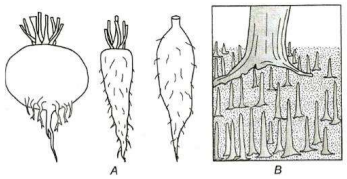
400. Epigynous flowers with numerous stamens are found in
a) *Ranunculus muricatus* b) *Fragaria indica*
c) *Croton roxburghii* d) *Syzygium cuminis*

401. Identify *A*, *B*, *C* and *D* in the given diagram



a) A-Aleurone layer, B-Endosperm, C-Coleoptile, D-Coleorhiza
b) A- Aleurone layer, C-Coleoptile, C-Endosperm, D-Coleorhiza
c) A-Coleoptile, B-Aleurone layer, C-Endosperm, D-Coleorhiza
d) A-Coleoptie, B-Aleurone layer, C-Coleorhiza, D-Endosperm

402. Which of the following is incorrect about the diagram *A* and *B*?



a) Tap roots of carrot, turnip and adventitious root of sweet potato get swollen and store food
b) Pneumatophores help to get oxygen for respiration
c) Pneumatophores are found in the plants that grows in sandy soil
d) A is underground roots, but B grows vertically upwards

403. What is the botanical name of mulberry?
a) *Morus* b) *Antherea* c) *Attacus* d) *Solanum*

404. Which one of the following is a pseudocarp?
a) Apple b) Guava c) Tomato d) Banana

405. In unilocular ovary with a single ovule, the placentation is
a) Marginal b) Basal c) Free central d) Axile

406. A hyaline bisexual and self-fertilized flower that does not open at all, is
a) Chasmogamous b) Apogamous c) Cleistogamous d) Polygamous

407. A plant with actinomorphic and hypogynous flowers, heterochlamydeous perianth, dorsifixed and extrorse anthers dehiscing transversely belongs to
a) Coronariae b) Bicarpellatae c) Thalamiflorae d) Calyciflorae

408. Opium (poppy) is a plant belonging to the family

a) Apocynaceae b) Papaveraceae c) Solanaceae d) Liliaceae

409. Ladies finger (bhindi) belongs to
a) Malvaceae b) Cruciferae c) Solanaceae d) Liliaceaea

410. Name the condition given in statement I and II
I. When stamens attached to the petals
II. When stamens attached to perianth

	I	II
a)	Epiphyllous	Epipetalous
b)	Epipetalous	Epiphyllous
c)	Staminode	Epiphyllous
d)	Epipetalous	Hypopetalous

411. Tracheophyta consists of
a) Bryophytes only b) Pteridophytes only
c) Gymnosperms and angiosperms d) Both (b) and (c)

412. Two plants 'A' and 'B' belonging to Solanaceae are observed. In plant 'A', the number of locules in the ovary of a flower is half of that of its carpel number. In plant B, the number of locules in the ovary of a flower is double the number of carpels. Identify the plants 'A' and 'B' respectively
a) *Capsicum, Datura* b) *Cestrum, Petunia*
c) *Withania, Solanum* d) *Lycopersicon, Nicotiana*

413. Double fertilization occurs among
a) Algae b) Bryophytes c) Angiosperms d) Gymnosperms

414. A flower which can be divided into two equal halves by only one plane is
a) Zygomorphic b) Actinomorphic c) Regular d) Perfect

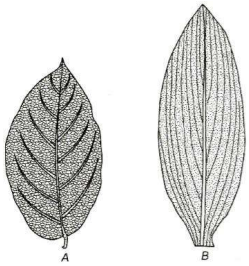
415. Cyathium inflorescence shows
a) Scorpioid cyme showing central female, many peripheral male flowers
b) Scorpioid cyme showing central male, many peripheral female flowers
c) Dichasial cyme showing two whorls of 3 to 9 flower
d) Dichasial cyme showing two whorls, one of male and another of female flowers

416. $\varphi K_{(5)}C_{1+2+(2)}A_{(9)+1}\underline{G}_1$ is the floral diagram of the family
a) Fabaceae b) Solanaceae c) Liliaceae d) Papaveraceae

417. A compound leaf, which appears as simple leaf due to the suppression of one or two leaflets is found in one of the following plants
a) *Hardwickia* b) *Parkinsonia* c) *Coriandrum* d) *Citrus*

418. Aggregate fruit is found in
a) *Ananas sativus* b) *Annona squamosa* c) *Artocarpus integrifolia* d) *Pyrus malus*

419. Identify the type of venation in the given diagram (*A* and *B*)



a) A-Reticulate (dicotyledons); B-Parallel (monocots)
b) A-Reticulate (monocots); B-Parallel (dicots)
c) A-Parallel (dicots); B-Reticulate (monocots)
d) A-Parallel (monocots); B-Reticulate (dicots)

420. In an inflorescence, two types of small, sessile flowers were observed. They are arranged in centripetal manner and have reduced hair-like sepals. Which pair of the following characters are not associated with such flowers?
I.Nectar glands at the base of the corolla

II.Axile placentation
III.Superior ovary
IV.Scaly bracts
a) II and III b) III and IV c) I and II d) I and IV

421. It is an example of amphibious plant
a) Lotus b) *Typha* c) *Vallisneria* d) *Trapa*

422. Keel is characteristic of the flowers of
a) Gulmohur b) *Cassia* c) *Calotropis* d) Bean

423. Tap roots of carrot, turnip and adventitious roots of sweet potato are the modification for the storage of
a) Water
b) Food
c) Secondary compound
d) Primary compound

424. Replum is found in family
a) Labiatae b) Malvaceae c) Compositae d) Brassicaceae

425. In a plant, the peduncle is elongated and it bears pedicillate flowers. The older flowers lie towards the base and the younger ones near the apex. The growth of the peduncle continues and more flowers are added. The inflorescence is
a) Raceme b) Corymb c) Umbel d) Head

426. Which one of the following statements are true?
I.If the stem is joined with solid nodes and hollow internodes, it is called caudex.
II.In *Tridax*, the stem is decumbent.
III.Corm is a condensed from of rhizome growing more or less in vertical direction.
IV.Sucker is an underground modification of stem.
V.Biparous type of cymose branching is seen in *Saraca*.
a) I, IV and V b) II and III c) II, III and V d) III and IV

427. The arrangement of the ovules on the placentae developed from the central axis of the ovary is called
a) Parietal placentation b) Axile placentation c) Basal placentation d) Marginal palcention

428. A simple one seeded fruit in which pericarp is fused with seed coat is
a) Achene b) Caryopsis c) Cypsela d) Nut

429. The endosperm is used by cotyledon, the cotyledon is
a) Single b) Albuminous c) Endospermic d) Non-endospermic

430. The leaf parts gets modified into spines in order to
a) Reduce transpiration b) Reduce surface area
c) Protect the plant from grazing animals d) All of the above

431. Plants mentioned in question number 167 and 168 belongs to which plant family?
a) Solanaceae b) Fabaceae c) Liliaceae d) Papaveraceae

432. Wearing isolated a dormancy inducing substance from the leaves of a plant. From which type of gynoecium does the fruit of that plant develop?
a) Bicarpellary, syncarpous gynoecium with inferior ovary
b) Bicarpellary, syncarpous gynoecium with superior ovary
c) Tricarpellary, syncarpous gynoecium with superior ovary
d) Monocarpellary gynoecium with half inferior ovary

433. A horizontal underground stem is a
a) Corm b) Phylloclade c) Rhizome d) Rhizoid

434. Treatment of seed at low temperature under moist conditions to break its dormancy is called
a) Scarification b) Vernalisation c) Chelation d) Stratification

435. The lateral roots originate from
a) Endodermal cells b) Pericycle cells
c) Epiblema d) Cortical cells below root hairs

436. Potato and sweet potato
   a) Have edible parts, which are homologous organs
   b) Have edible parts, which are analogous organs
   c) Have been introduced in India from the same place
   d) Are two species of the same genus

437. When flower has both and androecium and gynoecium, it is called …A…
   II. When flower has either stamens or only carpel, it is called …B…
   Complete the given statement by choosing appropriate options for A and B
   a) A-unisexual; B-bisexual
   b) A-bisexual; B-unisexual
   c) A-bisexual; B-hermaphrodite
   d) A-hermaphrodite; B-bisexual

438. One of the following is a dry indehiscent fruit
   a) Caryopsis
   b) Pod
   c) Follicle
   d) Lomentum

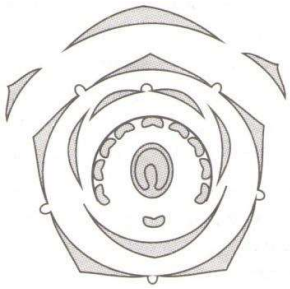
439. The characteristic type of placentation found in the members of Caryophyllaceae is
   a) Parietal
   b) Marginal
   c) Basal
   d) Free central

440. Edible part of cauliflower is
   a) Bud
   b) Inflorescence
   c) Flower
   d) Fruit

441. The circinate vernation is the characteristic feature of ferns. It refers to
   a) Coiling of young leaves
   b) Arrangement of leaves on stem
   c) Attachment of sori on leaves
   d) Heterophily

442. The fruit is chambered, developed from inferior ovary and has seeds with succulent testa in
   a) Pomegranate
   b) Orange
   c) Guava
   d) Cucumber

443. Observe the given floral diagram and choose the suitable floral formula from the followings



   a) $\%\,\varphi\,\sigma\,K_5C_5A_{10}\underline{G}_1$
   b) $\%\,\varphi\,\sigma\,K_{(5)}C_5A_{10}\underline{G}_1$
   c) $\%\,\varphi\,\sigma\,K_{(5)}C_{1+2+(2)}A_{(9)+1}\underline{G}_{10}$
   d) $\%\,\varphi\,\sigma\,K_5C_{1+2+(2)}A_{(9)+1}\underline{G}_1$

444. Starch is insoluble in water, yet it is accumulated in large quantities in potato tuber because
   a) It is useful for storage
   b) Tubers respire slowly
   c) Starch is synthesized in tubers
   d) Translocated sucrose is polymerized here

445. Small branches produced from lower 2 to 3 nodes in jowar are called
   a) Culm
   b) Prop roots
   c) Ligule
   d) Tillers

446. What is the fruit that develops from a tricarpellary, syncarpous, inferior ovary with parietal placentation?
   a) Pepo
   b) Pome
   c) Cypsela
   d) Capsule

447. Three floral diagrams are given here. Their respective families are assigned in the answer key. Find out the families to which these diagrams belong to

A - $⚥\ K_{Pappus}\ \overset{\frown}{C_{(5)}\ A_5}\ G_{\overline{(2)}}$

B - $⚥\ K_{(5)}\ \overset{\frown}{C_{(5)}\ A_{(5)}}\ G_{\underline{(2)}}$

C - $\oplus\ ⚥\ K_{2+2}\ C_4\ A_{2+4}\ G_{(2)}$

a) A-Liliaceae B-Asteraceae C-Solanaceae
b) A-Asteraceae B-Solanaceae C-Brassicaceae
c) A-Asteraceae B-Solanaceae C-Poaceae
d) A-Poaceae B-Solanaceae C- Asteraceae

448. The edible part in hesperidium fruit is
a) Pericarp b) Mesocarp c) Juicy hair d) Endocarp

449. Water stomata are found in
a) Plants lacking normal stomata
b) Plants inhibiting idry regions
c) Plants inhibiting humid region
d) All plants

450. Which one of the following is wrongly matched?

Column I	Column II
a) Caesalpiniaceae	Catechu
b) Palmae	Date palm
c) Euphorbiaceae	*Coccinia*
d) Musaceae	Banana

451. Fruit of custard apple is etaerio of
a) Berries b) Follicles c) Achenes d) Drupes

452. Which is correct to saprophytic angiosperm?
a) They secrets enzyme outside the body and absorb nutrients
b) They have mycorrhiza with fungi
c) They takes food and then digested it
d) They are photosynthetic

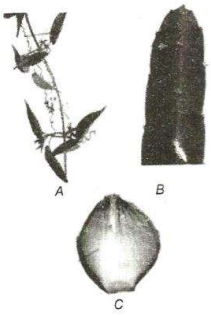
453. In cryopsis type of fruit
a) Seed is absent
b) Three layers of pericarp are distinct
c) Seed coat and pericarp are fused
d) Autochory occurs

454. Arrange the following plants in the ascending order based on the number of carpels they possess
I. *Oenothera*
II. *Acacia melanoxylon*
III. Squill
IV. Lettuce
a) IV, III, I, II b) II, IV, III, I c) II, III, IV, I d) I, IV, III, II

455. Rarely among angiosperms, the pollen grains influenced the endosperm. This is called as
a) Metaxenia b) Nemec phenomenon c) Xenia d) Mesogamy

456. Colchicines producing plant belongs to family
a) Liliaceae b) Rubiaceae c) Malvaceae d) Solanaceae

457. Identify the type of leaf modification in the given diagram (A to C)

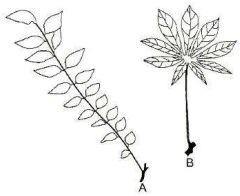


a) A-Support (spines), B-Protection (tendril), C-Storage (freshy leaves)
b) A-Support (dendril), B-Protection (spine), C-Storage (freshy leaves)
c) A-Protection (dendril), B-Support (spine), C-Storage (freshy leaves)
d) A-Protection (spine), B-Support (dendril), C-Storage (freshy leaves)

458. Study the following and choose the correct statements.
I.Bulb of *Allium cepa* is a modified stem.
II.Cloves of *Allium sativum* are fleshy scale leaves.
III.Corm of *Colocasia* is a modified root.
IV.Tendril in *Vitis vinifera* is a modified axillary bud.
a) I and II b) II and IV c) II and III d) I and IV

459. Stems are
a) Positively phototropic
b) Negatively geotropic
c) Negatively hydrotropic
d) All of the above

460. Identify the types of leaves given in the diagram *A* and *B*



a) A-Pinnately compound leaf (neem); B-Palmately compound leaf (silk cotton)
b) A-Pinnately compound leaf (silk cotton); B-Palmately compound leaf (neem)
c) A-Palmately compound leaf (silk cotton); B-Pinnately compound leaf (neem)
d) A-Palmately compound leaf (neem); B-Pinnately compound leaf (silk cotton)

461. The anthers in Solanaceae are
a) Monothecous, introrse
b) Dithecous, extrorse
c) Dithecous, introrse
d) Monothecovs, extrorse

462. Male reproductive organ (flower) consists of
a) Stalk b) Thalamus c) Anther d) Both (a) and (c)

463. A fruit developed from Hypanthodium inflorescence is called
a) Hesperidium b) Sorosis c) Syconous d) Caryopsis

464. I. Usually bilobed
II. Each lobe has two chambers (pollen sacs)
III. The chamber (pollen sacs) contains pollen grain
Above are the features of
a) Pistil b) Anther c) Stamen d) Petals

465. Which one of the following is an endospermic seeds?
a) Pea b) Bean c) Gram d) Castor

466. Identify the monocarpic palm.
a) *Areca* b) *Borassus* c) *Calamus* d) *Corypha*

467. Seed coat has ...A... layers
I. Outer covering is called ...B.... .

II. Inner covering is called ...C... .

Complete the given set of statements (I to III) by choosing appropriate options for A to C

a) A-3, B-testa, C-tegmen
b) A-2, B-testa, C-tegmen
c) A-2, B-tegmen, C-testa
d) A-3, B-tegmen, C-testa

468. Number of female flowers in a Cyathium inflorescence is

a) One b) Two c) Three d) Several

469. Identify the characters of gynoecium found in members of Asteraceae, Fabaceae, Liliaceae and Solanaceae, respectively

I.Tricarpelly syncarpous, ovary superior and trilocular.
II.Bicarpellary syncarpous, ovary superior and usually bilocular
III.Bicarpellary syncarpous, ovary inferior and unilocular.
IV.Monocarpellary, ovary half-inferior and unilocular.

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

470. Which one among the following is the true nut?

a) Walnut b) Ground nut c) Cashew nut d) Areca nut

471. Thalamus of hypogynous ovary is

a) Concave b) Convex c) Biconcave d) Biconvex

472. Which of the following plant parts can respire even in the absence of oxygen?

a) Seeds b) Roots c) Stems d) Leaves

473. A_{∞} represents

a) Indefinite stamens b) Numerous stamens c) Either (a) or (b) d) Both (a) and (b)

474. Aggregate fruit formed from

a) Multicarpellary apocarpous ovary
b) Multicarpellarey syncarpous ovary
c) Monocarpellary apocarpous ovary
d) Monocarpellary syncarpous ovary

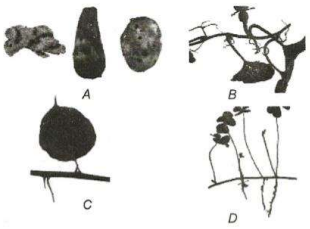
475. When the other floral parts are arranged at the base of the gynoecium, the flower is called

a) Hypogynous flower b) Perigynous flower c) Epigynous flower d) Agynous flower

476. Green leaf-like modified aerial stems/branches with a single internode are called

a) Phylloclades b) Phyllodes c) Bulbils d) Cladodes

477. Identify the stem modification for (*A* to *D*)



a) A-Support, B-Storage, C-Vegetative propagation, D-Protection
b) A-Storage, B-Support, C-Vegetative propagation, D-Protection
c) A-Storage, B-Support, C-Protection, D-Vegetative reproduction
d) A-Support, B-Storage, C-Protection, D-Vegetative reproduction

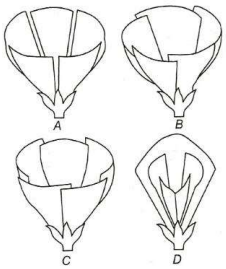
478. Which one of the following is a stem vegetable?

a) Sweet potato b) Potato c) Turnip d) Carrot

479. Which one of the following inhibits seed germination for a particular period?

a) Light b) Water c) Caron dioxide d) Dormancy

480. Identify types of aestivation in the given diagrams *A* to *D*



a) A-Valvate, B-Imbricate, C-Twisted, D-Vexillary b) A-Valvate, B-Twisted, C-Imbricate, D-Vexillary
c) A-Vexillary, B- Twisted, C-Imbricate, D-Valvate d) A-Vexillary, B-Imbricate, C-Twisted, D-Valvate

481. Jowar grain is
a) Caryopsis b) Pome c) Berry d) Nut

482. Vascular bundles are arranged in a ring in the members of family
a) Orchidaceae b) Iridaceae c) Euphorbiaceae d) Liliaceae

483. Floral formula $\oplus ♂♀ K_5C_5A_7 + {}_3\underline{G1}$ is of family
a) Papilionaceae b) Mimosoideae c) Caesalpinoidae d) Malvaceae

484. Legume plants are important for atmosphere because they
a) Help in N_2- fixation b) Do not help in N_2-fixation
c) Increase soil fertility d) All of the above

485. The example for trimerous, unisexual flower is
a) *Cocos nucifera* b) Hibiscus c) Tamarind d) Pea

486. *Cannabis sativa* is the source of
a) Opium b) LSD c) Marijuana d) Cocaine

487. In the following, succulent stem is found in
a) *Saccharum* b) *Musa* c) *Euphorbia* d) *Dryopteris*

488. Study the following table and choose the correct pair.

V.	False whorls-like inflorescence	Many sessile bisexual flowers *Leonotis*
VI.	Single flower-like inflorescence	Many stalked staminate and pistillate flowers *Poinsettia*
VII.	Fruit-like inflorescence	Many sessile staminate flowers on the top and pistillate flowers at the base and sterile flowers in between *Ficus*
VIII.	Fleshy axis of Inflorescence	Many stalked staminate *Colocacia* flowers at the Base and pistillate flowers on the top and sterile flowers in between

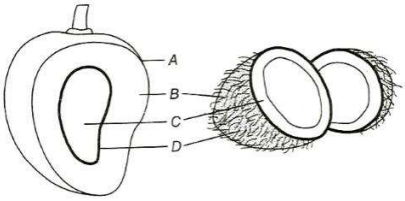
a) I and III b) I and IV c) II and III d) II and IV

489. Scorpioid cyme is seen in
a) *Hamelia* b) *Heliotropium* c) *Clerodendron* d) *Nerium*

490. Arrange the following fruits in descending order based on the number of locules in the ovary from which it develops.
IX. Carcerulus
X. Schizocarp
XI. Cremocarp
XII. Regma
a) II, I, IV, III b) I, IV, III, II c) II, IV, III, I d) II, III, I, IV

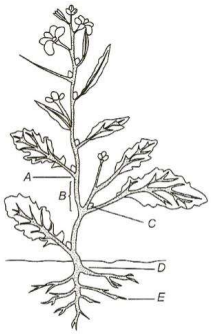
491. Juicy hair-like structures observed in the lemon fruit develop from
a) Endocarp b) Mesocarp and endocarp
c) Exocarp d) Mesocarp

492. Identify *A* to *D* in the given diagram



a) A-Epicarp, B-Mesocarp, C-Seed, D-Endocarp
b) A-Mesocarp, B-Epicarp, C-Seed, D-Endocarp
c) A-Mesocarp, B-Epicarp, C-Endocarp, D-Seed
d) A-Epicarp, B-Mesocarp, C-Endocarp, D-Seed

493. Identify *A* to *E* in the given diagram



a) A-Node, B-Internode, C-Accessory bud, D-Primary root, E-Secondary root
b) A-Node, B-Internode, C-Bud, D-Primary root, E-Secondary root
c) A-Internode, B-Node, C-Bud, D-Primary root, E-Secondary root
d) A-Internode, B-Node, C-Callus, D-Primary root, E-Secondary root

494. In pea, castor and maize the number of cotyledons are
a) 2, 2 and 1 respectively
b) 1, 2 and 2 respectively
c) 2, 1 and 2 respectively
d) 1, 2 and 1 respectively

495. ♂ stands for (in plants)
a) Perfect flower b) Bisexual flower c) Either (a) or (b) d) Imperfect flower

496. The most common type of ovule in angiosperms is
a) Amphitropous b) Atropous c) Anatropous d) Circinotropous

497. Underground stems of potato, ginger, turmeric, Zaminkand, *Colocasia* are the examples of modified stem for
a) Conduction of minerals
b) Conduction of water
c) Both (a) and (b)
d) Storage of food

498. Which of the following is a wheat fruit?
a) Achene b) Cypsella c) Caryopis d) Endosperm

499. Multicostate parallel type of venation is found in the leaves of
a) Grass and palms b) Banana and Canna c) Castor and China rose d) Mango and peepal

500. The edible part of the sweet potato is a modified
a) Stem b) Root c) Leaf d) Flower

501. $\underline{G}_{\infty}$ stands for
a) Gynoecium, polycarpellary, apocarpous, inferior
b) Gynoecium, polycarpellary, syncarpous, superior
c) Gynoecium, polycarpellary, apocarpous, superior
d) Gynoecium, polycarpellary, inferior, apocarpous inferior

502. The fruit of Solanaceae is
a) Berry of capsule b) Pome c) Legume of pod d) Drupe

503. An example of axile placentation is
a) *Argemopne* b) *Dianthus* c) Lemon d) Marigold

504. Scaly bulb stem modification is seen in
a) *Allium* b) *Lilium* c) *Scilla* d) *Ginger*

505. The monocotyledon seeds consist of one large and shield-shaped cotyledon known as
a) Aleurone layer b) Scutellum c) Coleoptiles d) Hilum

506. An Angiospermic plant has 24 chromosomes in 'microspore mother cells'. The number of chromosome in its endosperm will be
a) 12 b) 24 c) 36 d) 48

507. K_{2+2} represents
a) Four petals in two groups
b) Four petals in whorls of two each
c) Both (a) and (b)
d) Either (a) or (b)

508. In angiosperms, male gametes are formed from
a) Antipodals b) Prothallial cell c) Tube cell d) Generative cell

509. Which one of the following statements is correct with reference to *Amentum*?
a) The peduncle is fleshy and bears unisexual flowers and the flowers open in basipetal manner
b) The peduncle is condensed and bears bisexual flowers and the flowers open in a centripetal manner
c) The peduncle is weak, drooping and bear unisexual flowers and the flowers open in an acropetal manner
d) The peduncle grows indefinitely and bears bisexual flowers and flowers open in basipetal manner

510. In banana, pineapple and *Chrysanthemum*, the lateral branches originate from the basal and underground portion of main stem and then come obliquely upward giving rise to leafy shoots These branches are called
a) Runner b) Corm c) Bulb d) Sucker

511. Thorn is a modified branch because
a) It is hard, straight and pointed
b) It is a part of the plant
c) It arises in the axil of a leaf
d) It is a defensive organ

512. Lateral roots arise from
a) pericycle b) cortex c) endodermis d) stele

513. Which of the following promotes softening of fruits?
a) Polygalacturonase b) Colchicine c) Polyethylene glycol d) Cellulose

514. The economically important plant of Malvaceae is
a) *Gossypium hirsutum*
b) *Hibiscus cannabis*
c) *Abelmoschus esculentum*
d) All the above

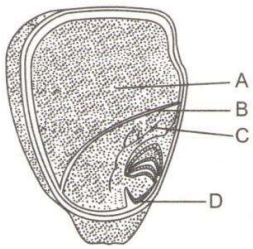
515. Tetradynamous stmens are found in family
a) Malvaceae b) Solanaceae c) Cruciferae d) Liliaceae

516. Diadelphous condition is found in
a) Rosaceae b) Papilionaceae c) Leguminosae d) Cucurbitaceae

517. The ovary is half inferior in flowers of
a) Cucumber b) Cotton c) Guava d) Peach

518. The reticulate venation is commonly found in the leaves of
a) Monocot plants b) Dicot plants c) Bryophytes d) Thallophytes

519. The diagram represents the LS of monocot seed. Choose the correct combination of labeling.



Column I	Column II
Coleorhizae Food storing tissue	Radicle

Parthenocarpic fruit	Endosperm
Single seeded fruit developing from monocarpellary superior ovary	Grapes
	Mango
Membranous seed coat	Maize

	A	B	C	D
a)	Aleurone layer	Scutellum	Colepotile	Coleorhiza
b)	Seed coat	Scutellum	Coleptile	Coleorhiza
c)	Epithelium	Scutellum	Plumule	Coleorhiza
d)	Endosperm	Scutellum	Coleoptile	Coleorhiza

520. Pneumatophores are the roots for
a) Storing water
b) Asexual reproduction
c) Respiration
d) Sexual reproduction

521. A fruit in which seed coat and fruit wall is fused known as caryopsis present in
a) Wheat b) Sunflower c) Mango d) Tomato

522. Pneumatophores are usually present in
a) *Murraya* b) *Eichhornia* c) *Avicinnea* d) None of these

523. Perigynous type of ovary is found in
a) Plum b) Rose c) Pearch d) All of these

524. Umbel inflorescence is found in
a) *Musa* b) *Colocasia* c) *Coriandrum* d) *Helianthus*

525. In drumstick, the seeds are dispersed by
a) Water
b) Animals
c) Wind
d) Explosive mechanism

526. A characteristic feature of ovary of *Brassica campestris* is
a) Presence of replum
b) Axile placentation
c) Epigynous
d) Multilocular nature

527. Vivipary is observed in
a) Banyan b) Bryophyllum c) Ipomoea d) Rhizophora

528. Find out the wrongly matched pair.
a) Tuber- Potato
b) Rhizome-Ginger
c) Bulbil-*Agave*
d) Leaf buds-Banana

529. In a longitudinal section of a root, starting from the tip upward the four zones occur in the following order :
a) Root cap, cell division, cell enlargement, cell maturation
b) Root cap, cell division, cell maturation, cell enlargement
c) Cell division, cell enlargement, cell maturation, root cap
d) Cell division, cell maturation, cell enlargement, root cap

530. Scientific name of sunflower is
a) *Hibiscus rosa-sinensis*
b) *Solanum nigrum*
c) *Oryza sativa*
d) *Helianthus annuus*

531. Seeds posses spongy aril in
a) *Eichhornia* b) *Potamogeton* c) *Sagittaria* d) *Nymphaea*

532. Which of the following statements is correct?
a) Replum is found in the ovary of *Pisum*
b) The anthers are introrse in *Hibiscus*
c) The ovules are pendulous in *Nelumbo*
d) Lateral style is found in *Ocimum*

533. Inflorescence in jowar is
a) Corymb b) Spike c) Panicle d) Head

534. United sepals are called ...A... .
Free sepals are called ...B... .
Here, A and B refers to

a) A-polysepalous; B-gamosepalous
b) A-gamosepalous; B-polysepalous
c) A-gamopetalous; B-polypetalous
d) A-polypetalouos; B-gamopetalus

535. Spadix inflorescence occurs in
a) Mulberry b) Banana c) *Delonix* d) Coriander

536. The modified stem of *Opuntia* is
a) Phyllode b) Phylloclade c) Cladode d) Staminode

537. The outer covering of endosperm separates the embryo by a proteinous layer called
a) Plumule b) Radicle c) Aleurone layer d) Scutelium

538. Swollen and spongy petioles are characteristic of
a) *Trapa* b) *Wolffia* c) *Ceratophyllum* d) *Limnophila*

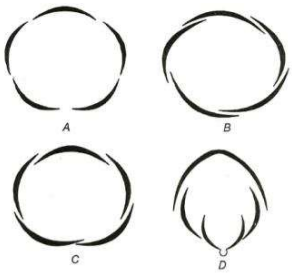
539. Which one of the following is a monocarpic tree?
a) *Borassus flabellifer*
b) *Corypha umbraculifera*
c) *Phoenix dactylifera*
d) *Elaeis guineensis*

540. ♂ stands for ...A...
⊕ stands for ...B...
% stands for ...C...
Here, A to C refers to
a) A-bisexual plant, B-actinomorphic, C-zygomorphic
b) A-unisexual, B-actinomorphic, C-zygomorphic
c) A-unisexual, B-zygomorphic, C-actinomorphic
d) A-bisexual plant, B-zygomorphic, C-actinomorphic

541. A plant is considered to possess all advanced morphological characters based on the evolutionary significance. Which one of the following sets of characters does the plant denote the same?
a) Dioecious condition, gamopetalous corolla and multiple fruit
b) Actinomorphic flowers, free stamens and endospermic seeds
c) Perennial life span, dichlamydous flower and simple fruit
d) Simple leaves, monoecious condition and apocarpous pistil

542. Leaf having single or undivided lamina is called
a) Compound leaf b) Simple leaf c) Either (a) or (b) d) General leaf

543. Identify the type of aestivation in the given diagram (*A* to *D*)



a) A-Twisted, B-Valvate, C-Vexillary, D-Imbricate
b) A-Valvate, B-Twisted, C-Imbricate, D-Vexillary
c) A-Valvate, B-Twisted, D-Vexillary, D-Imbricate
d) A-Valvate, B-Vexillary, C-Twisted, D-Imbricate

544. Identify the order of plants showing alternate, opposite and whorled phyllotaxy.
a) China rose, *Calotropis* and *Nerium*
b) China rose, *Nerium* and *Calotropis*
c) *Nerium*, China rose and *Calotropis*
d) *Nerium*, *Calotropis* and China rose

545. Main difference between creepers and trailers is
a) Creepers are rooted at node while trailers don't
b) Creepers and not rooted at node while trailers do
c) Creepers have internodes while trailers don't
d) Creepers have node while trailers don't

546. Which one of the following is an example of cleistogamy?
a) Sunflower b) *Vallisneria* c) *Commelina* d) *Calotropis*

547. In the monocotyledon seeds, the endosperm is separated from the embryo by a distinct layer known as
a) Testa b) Aleurone c) Tegmen d) Epithelium

548. Arrangement of petal and sepal with respect to each other is
a) Placentation b) Phyllotaxy c) Aestivation d) Anthotaxy

549. Which of the following members of family-Solanaceae is rich in source of vitamin-C?
a) Tomato b) Guava c) Gooseberry d) Strawberry

550. Match the following pairs.

XIII.	Polysiphonous Pollen	– Floral bectaries	-Simple sieve plate
XIV.	Angular collocyte	-Monosiphonous Pollen	-Synandry
XV.	Inserted stamens	-Simple leaves	-Spines
XVI.	Exerted stamens	-Reticulate divergent venation	-Pepo

select the correct pair of answers, in which the former in the pair shows the set of characters presents in *Cucurbita* and the latter in the pair shows the set of character absent in Acacia.
a) I and III b) I and II c) II and III d) III and IV

551. Which of the following statements are true/false?
I.Trimerous condition of floral whorl is characteristic of dicotyledons.
II.*Adiantum* is also called walking fern.
III.In gymnosperms, the vascular system consists of xylem without vessels and phloem with companion cells.
IV.*Riccia* and *Marchantia* are liverworts.
a) I and II are true and III and IV are false
b) I and III and true and II and IV are false
c) I and IV are true and II and III are false
d) II and IV are true and I and III are false

552. Most of the petrocrops belong to family
a) Malvaceae b) Rutaceae c) Leguminosae d) Euphorbiaceae

553. Seeds are
a) Ovules after fertilisation b) Ovules before fertilisation
c) Ovary before fertilisation d) Ovary after fertlisation

554. Roots arising from the part of plant other than the radicle are called
a) Adventitious root b) Stilt root c) Nodal root d) Intermodal root