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IIT-JEE | MEDICAL | Foundations

MARPHOLOGY OF FLOWERING PLANT

MOST IMPORTANT QUESTION PAPER

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1. Roots that grow from any other part of the plant other than the radicle are called

- (a) taproots
- (b) adventitious roots
- (c) prop roots
- (d) epiphytic roots

2. A large globular root that tapers sharply at the lower end is called

- (a) fusiform
- (b) napiform
- (c) conical
- (d) tuberous

3. The roots that have swellings at regular intervals are called

- (a) nodulose
- (b) fasciculated
- (c) moniliform
- (d) tuberous

4. Massive aerial roots present in a Banyan tree is

- (a) fibrous
- (b) respiratory
- (c) epiphytic
- (d) prop roots

5. Plants growing in swamps have roots that grow vertically upwards like conical spikes and have aerating pores. Such roots are called

- (a) pneumatophores
- (b) mycorrhizal
- (c) conical
- (d) assimilatory

6. The roots of the parasitic plant Cuscuta are of

- (a) climbing
- (b) prop or stilt

- (c) mycorrhizal
- (d) haustoria

7. A short, vertical underground stem that contains the food reserve is called

- (a) rhizome
- (b) bulb
- (c) corm
- (d) tuber

8. Ginger is an example of

- (a) rhizome
- (b) bulb
- (c) corm
- (d) tuber

9. A long green stem with long internodes growing horizontally on the soil surface is called

- (a) runner
- (b) sucker
- (c) stolon
- (d) offset

10. A short, green, flattened branch resembling a leaf arising from the axil of a reduced scale leaf is called

- (a) phylloclade
- (b) cladode
- (c) phyllode
- (d) stipule

11. When many equally strong veins like midrib arise from the petiole towards the margin of the leaf forming a network, the leaf is said to

- (a) reticulate pinnate
- (b) reticulate palmate
- (c) parallel pinnate
- (d) parallel palmate

12. In a pitcher plant, the pitchers are modified

- (a) fruits
- (b) branches
- (c) petioles
- (d) leaves

13. The sharp spines in cactus are modified

- (a) leaflets
- (b) leaves
- (c) branches
- (d) thorns

14. The tendrils of the pea plant *Pisum* are modifications of

- (a) branch
- (b) axillary bud
- (c) leaf
- (d) apical bud

15. When the leaflets are joined together at a common point at the petiole, the leaf is

- (a) simple leaf
- (b) pinnately compound leaf
- (c) palmately compound leaf
- (d) a branch

16. Phyllotaxy refers to an arrangement of

- (a) phloem in a vascular bundle
- (b) leaves on a branch
- (c) veins in a leaf
- (d) axillary buds in a plant

17. A flower that has only stamens is called

- (a) unisexual flower
- (b) bisexual flower

- (c) complete flower
- (d) neuter flower

18. A flower with a superior ovary is called

- (a) hypogynous
- (b) perigynous
- (c) epigynous
- (d) syncarpous

19. An inflorescence with the main axis elongated bearing flowers in a pendulous axis is called

- (a) raceme
- (b) spike
- (c) catkin
- (d) spadix

20. On maturity, an ovule forms a

- (a) seed
- (b) fruit
- (c) embryo sac
- (d) endosperm

21. Pineapple is an example of

- (a) simple fruit
- (b) aggregate fruit
- (c) multiple fruits
- (d) false fruit

22. Monocarpellary, superior ovary is found in

- (a) Liliaceae
- (b) Poaceae
- (c) Solanaceae
- (d) Fabaceae

23. Tricarpellary, the syncarpous condition is found in

- (a) Liliaceae

- (b) Poaceae
- (c) Solanaceae
- (d) Asteraceae

24. Family Fabaceae has

- (a) 4 corolla
- (b) 5 corolla
- (c) 6 corolla
- (d) none of these

25. Which of the following plant parts elongates directly and leads to the formation of primary roots?

- (a) bud
- (b) radicle
- (c) plumule
- (d) root hair

26. The primary roots and their branches constitute the

- (a) fibrous root system
- (b) taproot system
- (c) adventitious root system
- (d) all of the above

27. The fibrous root system is found in

- (a) monocotyledonous plants
- (b) dicotyledonous plants
- (c) bryophytes
- (d) gymnosperms

28. Roots develop from parts of the plant other than radicle are called

- (a) taproots
- (b) fibrous roots
- (c) adventitious roots
- (d) nodular roots

29. Root hairs develop from

- (a) region of maturation
- (b) region of elongation
- (c) region of meristematic activity
- (d) root cap

30. The part of the root which is most active in water absorption is called

- (a) root cap
- (b) maturation zone
- (c) meristematic zone
- (d) zone of elongation

31. Fibrous roots develop in maize from

- (a) upper nodes
- (b) lower nodes
- (c) upper internodes
- (d) none of these

32. Prop roots of the banyan tree are meant for

- (a) respiration
- (b) absorption of water from the soil
- (c) providing support to the big tree
- (d) all of the above

33. Stilt roots occur in

- (a) groundnut
- (b) rice
- (c) sugarcane
- (d) wheat

34. Pneumatophores are found in

- (a) the vegetation which is found in marshy and saline lake
- (b) the vegetation which is found in saline soil
- (c) xerophytic condition
- (d) hydrophytic condition

35. Which of the following plants grow in swampy areas, where the roots come out of the ground and grow vertically upwards?

- (a) Potato
- (b) Opuntia
- (c) Rhizophora
- (d) Grass

36. Root differs from the stem in having

- (a) nodes and internodes
- (b) axillary buds
- (c) multicellular hairs
- (d) unicellular hairs

37. Which of the following plant parts is generally green when young and later often become woody and dark brown?

- (a) stem
- (b) seed
- (c) leaves
- (d) flower

38. The regions of the stem where leaves are borne are called _ while _ are the portions between two _

- (a) nodes, nodes, and internodes
- (b) nodes, internodes, and nodes
- (c) internodes, nodes, and nodes
- (d) internodes, internodes, and nodes

39. Which of the following plant groups has underground stems?

- (a) Potato, ginger, turmeric, Euphorbia, zaminkand
- (b) Potato, ginger, turmeric, zaminkand, Colocasia
- (c) Potato, Citrus, Opuntia, zaminkand, Colocasia
- (d) Potato, cucumber, watermelon, zaminkand, Colocasia

40. Stem tendrils can be found in

- (a) cucumber
- (b) pumpkins

- (c) grapevines
- (d) all of these

41. What is a modified stem used to protect plants from browsing animals?

- (a) Tendrils
- (b) Thorns
- (c) Rhizome
- (d) Tuber

42. Fibrous root in maize develop from

- (a) Lower internodes
- (b) Lower nodes
- (c) Upper nodes
- (d) None of the above

43. Which of the following plants have root pockets?

- (a) Eichhorinia
- (b) Capparis
- (c) Opuntia
- (d) Banyan

44. In which of the following, the plants have all roots?

- (a) Podostemon
- (b) Lemna
- (c) Wolffia
- (d) Utricularia

45. Food present in bulbil occurs in

- (a) Root
- (b) Stem
- (c) Leaf base
- (d) Petioles

46. From which part of the root, root hairs develop?

- (a) Region of maturation

- (b) Region of elongation
- (c) Meristematic region
- (d) Region of root cap

47. Epiphytic roots are found in

- (a) Indian rubber
- (b) Orchid
- (c) Tinospora
- (d) Cuscuta

48. Potatoes are borne on

- (a) Primary roots
- (b) axil of scaly leaves
- (c) Lateral roots
- (d) Adventitious roots

49. Some plants have rhizomes and roots as underground structures. Which characteristics of rhizome would distinguish them from roots?

- (a) Rhizomes are thicker than roots
- (b) Rhizomes have scaly leaves
- (c) Rhizome are thinner than roots
- (d) None of the above

50. Sweet potato is a modification of

- (a) Primary root
- (b) leaf
- (c) underground root
- (d) Adventitious root

51. Roots are differentiated into adventitious roots by their

- (a) Function
- (b) appearance
- (c) place of origin
- (d) position

52. Winged petiole is found in

- (a) citrus
- (b) acacia
- (c) radish
- (d) peepal

53. In one of the following the stem performs the function of storage and propagation

- (a) Ginger
- (b) Wheat
- (c) Radish
- (d) Groundnut

54. Leaves are attached to the stem at

- (a) Apical meristem
- (b) Internode
- (c) Nodes
- (d) Axillary meristem

55. Phyllotaxy refers to

- (a) Arrangement of leaves on the stem
- (b) Folding leaf in the bud
- (c) (a) & (b) both
- (d) None of the above

56. Plants with jointed stem and hollow internodes are known as

- (a) Clums
- (b) Scape
- (c) Ephemerals
- (d) Lianas

57. Bulbils take part in

- (a) Sexual reproduction
- (b) Respiration
- (c) Transpiration
- (d) Vegetative reproduction

58. The stem is very much reduced in

- (a) Tuber
- (b) Bulb
- (c) Corm
- (d) Rhizome

59. Turmeric is a stem and not a root because

- (a) It stores food material
- (b) It grows parallel to the soil surface
- (c) It has nodes and internodes
- (d) It has chlorophyll

60. Grasses are examples of the following type of stem

- (a) Suckers
- (b) Runners
- (c) Stolon
- (d) Rhizomes

61. Red root is the name of

- (a) Carrot
- (b) Sweet potato
- (c) Potato
- (d) Beetroot

62. Tiny sacs or bladders are found in

- (a) Utriculariya
- (b) Salvinia
- (c) nepenthes
- (d) Hydrilla

63. Which would do maximum harm to a tree? The loss of

- (a) Half of its branches
- (b) All of its leaves
- (c) Half of its flower
- (d) Half of its bark

64. Smallest dicotyledonous parasitic plant of the world is

- (a) *Coryadalis nana*
- (b) *Primula minutissima*
- (c) *Arcethobium minustissimum*
- (d) *Marsilea minuta*

65. Adventitious roots

- (a) Develop from radical
- (b) Develop from flower
- (c) Develop from embryo
- (d) Develop from any part of plant body except radical

66. The arrangement of leaves on a stem is called

- (a) Venation
- (b) Vernation
- (c) Phyllotaxy
- (d) Axis

67. Stem modified into flattened photosynthetic structure is

- (a) Phyllode
- (b) Bulbil
- (c) Phylloclade
- (d) Tendril

68. Nodulated roots occur in

- (a) Leguminoceae
- (b) Solanaceae
- (c) Malvaceae
- (d) Papilionaceae

69. Insectivorous plants catch insects for obtaining

- (a) Na – K
- (b) Taste
- (c) Phosphorus
- (d) Nitrogen

70. Petiole is modified into tendril in

- (a) Passiflora
- (b) Gloriosa
- (c) Pisum
- (d) clematis

71. Thorn is a stem structure because it

- (a) Develops from the trunk
- (b) Develops from the apical bud
- (c) modification of bank floral bud
- (d) is pointed

SHOW ANSWER

72. Vegetative reproduction of Agave occurs through

- (a) Rhizome
- (b) Stolon
- (c) Bulbils
- (d) Sucker

73. What is the eye of a potato?

- (a) Axillary bud
- (b) Accessory bud
- (c) Adventitious bud
- (d) Apical bud

74. If a raceme inflorescence is branched, it is called?

- (a) Umbel
- (b) spike
- (c) Cymose
- (d) Panicle

75. Zig-zag development of inflorescence axis is an example of

- (a) Helicoid cyme
- (b) Scorpioid
- (c) Umbel
- (d) Compound umbel

76. Opposite decussate phyllotaxy is found in

- (a) Calotropis
- (b) Mango
- (c) Hibiscus
- (d) Nerium

77. A brightly coloured bract-like covering associated with the banana inflorescence is called

- (a) Spathe
- (b) Scape
- (c) Spiral
- (d) Scapigeron

78. Inflorescence is

- (a) Number of flower present on an axis
- (b) Arrangement of flowers on an axis
- (c) Method of the opening of a flower
- (d) Type of flower borne on a peduncle

79. In monocot male gametophyte is

- (a) Megaspore
- (b) Nucleus
- (c) Microspore
- (d) Tetrad

80. A catkin of the unisexual flower is found in

- (a) Mulberry
- (b) Wheat
- (c) Onion
- (d) Grass

81. Flower is a

- (a) Modified cone
- (b) Modified spike
- (c) Modified branch system
- (d) Modified reproductive shoot

82. Flowers are always present in

- (a) Cryptogamous
- (b) Pteridophytes
- (c) Angiosperms
- (d) Bryophytes

83. Floral formula represents

- (a) number and arrangement of floral parts
- (b) Number of flowers in an inflorescence
- (c) Type of flowers in a family
- (d) None of above

84. From the life cycle point of view, the most important part of plants is

- (a) Flower
- (b) Leaf
- (c) Stem
- (d) Root

85. The vexillum, (standard) wings, and keel in pea flowers constitute

- (a) Calyx
- (b) Corolla
- (c) Androecium
- (d) Gynaecium

86. Diadelphous condition is present on

- (a) Citrus
- (b) Bombyx
- (c) Pisum
- (d) Brassica

87. The number of female flowers in a cyathium is

- (a) One
- (b) Two
- (c) Three
- (d) Many

88. The perianth is found in a flower in which

- (a) Calyx and Corolla are not distinguishable
- (b) Stamens are leaf like
- (c) Corolla leaf-like but the calyx is colored
- (d) None of the above

89. Stamens with free anthers but filaments fused into several groups are

- (a) Polyadelphous
- (b) Diadelphous
- (c) Monadelphous
- (d) Syngenesious

90. Pappus is a modification of

- (a) Calyx
- (b) Corolla
- (c) Stamens
- (d) Gynoecium

91. Placentation in legumes is

- (a) Basal
- (b) Marginal
- (c) Axile
- (d) Free central

92. The leaves are modified into tendrils, hooks, pitcher, and bladder in the following plants respectively

- (a) sweet pea, bignonia, Nepenthes, Utricularia
- (b) sweet pea, bignonia, Utricularia, Nepenthes,
- (c) Nepenthes , bignonia, sweet pea, Utricularia
- (d) Utricularia, Nepenthes, bignonia, sweet pea

93. Leaf apex is modified into tendril in

- (a) Smilax
- (b) Gloriosa
- (c) Australian acacia
- (d) Pea

94. A fibrous root system is better adapted than a tap root system for

- (a) Storage food
- (b) Anchorage of the plant to soil
- (c) Absorption of water and organic food
- (d) Transport of water and organic food

95. Which is not a stem modification?

- (a) Rhizome of Ginger
- (b) Corm of Colocasia
- (c) Pitcher of Nepenthes
- (d) tuber of the potato

96. A pair of insectivorous plants are

- (a) Dionaea and Viscum
- (b) Nepenthes and bladderwort
- (c) Drosera and rafflesia
- (d) Venus fly and Rafflesia

97. A phyllode is a modified

- (a) leaf
- (b) stem
- (c) root
- (d) branch

98. An underground specialized shoot with a reduced disc-like stem covered by fleshy leaves is

- (a) bulb
- (b) Rhizome
- (c) rhizophore
- (d) bulbil

99. Stipular tendril modification is found in

- (a) Smilax
- (b) Pea
- (c) Guava
- (d) Mimosa pudica

100. Viscum is

- (a) total stem parasite
- (b) total root parasite
- (c) partial stem parasite
- (d) partial root parasite

101. Root pocket does not occur in

- (a) Ipomoea
- (b) Mangrove plants
- (c) trapa
- (d) pistia

102. Phylloclades are

- (a) leaf modification
- (b) one internode and long stem
- (c) modified petioles
- (d) green succulent stem of indefinite growth

103. The bladder of Utricularia and Pitchers of nepenthes are modifications of

- (a) leaves
- (b) stems
- (c) root
- (d) flowers

104. Tallest gymnosperm

- (a) sequoia
- (b) Eucalyptus
- (c) Pinus
- (d) Rannuncoulus

105. The "Eyes" of the potato tuber is

- (a) Root buds
- (b) Flower buds
- (c) Shoot bud
- (d) Axillary buds

106. Vexillary aestivation is characteristic of the family

- (a) Asteraceae
- (b) Solanaceae
- (c) Brassicaceae
- (d) Fabaceae

107. Mangrove plant live in

- (a) Alpine Tundra
- (b) Tundra
- (c) Marshy areas along rivers
- (d) Marshy areas along the seashore

108. Succulents are likely to be found in

- (a) Tropical rain forest
- (b) Deciduous forest
- (c) Deserts
- (d) Tundra

109. In a compound umbel, each umbellate is subtended by

- (a) Involucre
- (b) Bracket
- (c) Involucel
- (d) Bracteole

110. In the monocotyledonous seeds, the endosperm is separated from the embryo by a distinct layer known as

- (a) testa
- (b) epithelial layer
- (c) tegmen
- (d) scutellum
- (e) coleoptile

111. The fleshy receptacle encloses a number of

- (a) Berries
- (b) achene

- (c) Unisexual flower
- (d) Samaras

112. The ovary is half inferior in flowers of

- (a) Peach
- (b) Cucumber
- (c) Cotton
- (d) Guava

113. Which one of the following statements is correct?

- (a) In tomato, fruit is capsule
- (b) Seeds of orchids have oil-rich endosperm
- (c) Placentation in primrose is basal
- (d) Flower of tulip is a modified shoot.

114. Flowers are zygomorphic in

- (a) Mustard
- (b) Gulmohar
- (c) Tomato
- (d) Datura

115. Phyllode is present in

- (a) Euphorbia
- (b) Australian Acacia
- (c) Opuntia
- (d) Asparagus

116. Cymose inflorescence is present in

- (a) Sesbania
- (b) Trifolium
- (c) Brassica
- (d) Solanum

117. The seed can be defined as

- (a) An immature embryo protected by coats
- (b) A mature ovule with a dormant embryo with enough reserve food and a

protective coating.

- (c) A mature spore with enough reserve food and protective coatings
- (d) A mature ovary with reserve food and protective coverings

118. In the maize grain, the starchy food is stored in

- (a) Cotyledons
- (b) Coleoptile
- (c) Aleurone layer
- (d) Endosperm

119. Which one of the following is not fruit?

- (a) Cabbage
- (b) Apple
- (c) Watermelon
- (d) Tomato

120. What is the edible part of Mango?

- (a) Epicarp
- (b) Mesocarp
- (c) Endocarp
- (d) Thalamus

121. A fruit in which the fruit wall (pericarp) and seed coat have got fused is called

- (a) Legume
- (b) caryopsis
- (c) nut
- (d) drupe

122. A composite or multiple fruits develop from

- (a) Polycarpellary ovary
- (b) Bicarpellary and syncarpous ovary
- (c) Apocarpous ovary
- (d) Inflorescence

123. Wheat grain is an example of :

- (a) Achene
- (b) Caryopsis
- (c) Nut
- (d) Follicle

124. Which fruit is a type of nut?

- (a) Ground nut
- (b) Oat
- (c) Walnut
- (d) Cashew nut

125. What is the edible part of coconut?

- (a) Entire seed
- (b) Fruit wall
- (c) Endosperm
- (d) None of the above

126. Water inside a coconut is

- (a) Liquid endosperm
- (b) Liquid endocarp
- (c) Liquid Mesocarp
- (d) Liquid Nucleus

127. False fruit is a fruit that develops from:

- (a) Ovary
- (b) Any part of the flower except the ovary
- (c) Apocarpous carpellary
- (d) Syncarpous carpellary

128. Fibers are found on the seeds of:

- (a) Calotropis
- (b) Gossypium
- (c) Alstonia
- (d) All of above

129. Which is the correct pair for an edible part?

- (a) Tomato – Thalamus
- (b) Maize – Cotyledons
- (c) Guava – Mesocarp
- (d) Date palm- Pericarp

130. How many plants in the list given below have composite fruits that develop from an inflorescence?

Walnut, poppy, radish, pineapple, apple, tomato, mulberry.

- (a) Five
- (b) Two
- (c) Three
- (d) Four

131. A characteristic of angiosperm is

- (a) Flower
- (b) Root
- (c) Seed
- (d) All of these

132. The capacity for vegetative reproduction is found in

- (a) Leaves
- (b) Roots
- (c) Stem
- (d) All of above

133. _ are the vegetative organs of the flowering plants

- (a) Root, stem, flower
- (b) Leaves, stem, fruits
- (c) Roots, leaves, flowers
- (d) Roots, stem, leaves

134. A root can be differentiated from the stem because of the absence of

- (a) Green colour
- (b) Nods and internodes

- (c) Hair
- (d) Branches

135. Which one of the following is not a characteristic of the root

- (a) Presence of root tap
- (b) Presence of unicellular hair
- (c) Presence of chlorophyll
- (d) Absence of buds

136. When the trunk is unbranched and bears a crown of leaves at its apex, it is known as

- (a) Runner
- (b) Sucker
- (c) Caudex
- (d) Culm

137. Parallel venation is a characteristic of

- (a) Legumes
- (b) Grasses
- (c) Parasitic plants
- (d) Xerophytic plants

138. Leaf morphology helps in

- (a) Plant identification
- (b) Plant classification
- (c) None of these
- (d) (a) & (b) both

139. When the stem or its branch ends into a floral bud

- (a) Vegetative growth starts
- (b) Reproductive growth starts
- (c) Lateral branch is given out
- (d) Apical growth is stimulated

140. The root that grows from any part of the plant body other than the radical is called?

- (a) Tap root
- (b) Adventitious root
- (c) Modified roots
- (d) Aerial roots

141. _ require more than two growing seasons to complete their life cycle

- (a) Annual
- (b) Perennials
- (c) Biennials
- (d) Herbs

142. Modified stem of _ protect the plant from grazing animal

- (a) Datura festuosa
- (b) Aloe vera
- (c) Gloriosa superba
- (d) Carissa carandus

143. Which of the following is actually not a flower?

- (a) Shoe flower
- (b) Sun flower
- (c) Rose
- (d) Pea

144. The beauty of the Bougainvillea flower is

- (a) Corolla
- (b) Calyx
- (c) Bracts
- (d) Androecium

145. Flower in which the only set of one essential organ develops is called

- (a) Unisexual
- (b) Monoecious
- (c) Dioecious
- (d) Polygamous

146. Individual components of Perianth are called

- (a) Sepals
- (b) Petals
- (c) Tepals
- (d) Brackets

147. Brinjal show which calyx

- (a) Pappus
- (b) Deciduous
- (c) Caduceus
- (d) Persistent

148. The hairs present in maize corn cob are

- (a) Styles
- (b) Stigma
- (c) Seed hairs
- (d) Modified hairs of bracts

149. Seed is :

- (a) Fertilized embryo
- (b) Fertilized ovary
- (c) Fertilized fruit
- (d) Fertilized ovule

150. A pome fruit is said to be false because

- (a) The pericarp is inconspicuous
- (b) The endocarp is cartilaginous
- (c) The fruit is present in fleshy edible thalamus
- (d) The fruit is derived from an inferior ovary

ANSWER KEY

1-B	2-B	3-C	4-D	5-A
6-D	7-C	8-A	9-A	10-B
11-B	12-D	13-B	14-C	15-C
16-B	17-A	18-A	19-C	20-A
21-A	22-D	23-A	24-B	25-B
26-B	27-A	28-C	29-A	30-B

31-B	32-C	33-C	34-A	35-C
36-D	37-A	38-B	39-B	40-D
41-B	42-B	43-A	44-A	45-C
46-B	47-B	48-B	49-B	50-D
51-C	52-A	53-A	54-C	55-A
56-A	57-D	58-B	59-C	60-B

61-D	62-A	63-B	64-C	65-D
66-C	67-C	68-A	69-D	70-D
71-D	72-C	73-A	74-D	75-A
76-A	77-A	78-B	79-C	80-A
81-D	82-C	83-A	84-A	85-B
86-C	87-A	88-A	89-A	90-A
91-B	92-A	93-B	94-B	95-C
96-B	97-A	98-A	99-A	100-C

101-D	102-D	103-A	104-A	105-D
106-D	107-D	108-C	109-B	110-B
111-C	112-A	113-B	114-B	115-B
116-D	117-B	118-D	119-A	120-B
121-B	122-D	123-B	124-D	125-C
126-A	127-B	128-D	129-B	130-A

131-A	132-D	133-D	134-B	135-C
136-C	137-B	138-D	139-B	140-B
141-B	142-D	143-B	144-C	145-A
146-C	147-D	148-A	149-D	150-C