



PLANT MORPHOLOGY AND ANATOMY

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XENON

STILL THAT SAME FRIENDLY STRANGER

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Morphology and Anatomy of Plants

IMPORTANT POINTS

Flowering plants are the most dominant plants of the earth, exhibit some variations in morphology, possess well-developed shoot and root systems, which is positively geotropic and hydrotropic and negatively phototropic, and develops from radical. Dicot plants have tap root system and monocots have fibrous root system. Roots help in fixation of plant in soil, and absorption of water and minerals. They also help in storage of food, mechanical support, climbing, photosynthesis, respiration, absorption of moisture, parasitism, symbiosis and reproduction. On the other hand, shoot system is developed from plumule, negatively geotropic and hydrotropic, and positively phototropic, which is differentiated into stem, leaves, flowers and fruits. Stem possessor node, internode, leaves, hairs, axillary & apical buds. Stem helps in storage of food, reproduction, protection, climbing and photosynthesis. On the basis of types of venations, there are two types of leaves – reticulate and parallel. Leaves are also of two types – simple and compound. On the basis of arrangement, of leaves are of three types – alternate, opposite and whorled. Leaves help in storage of food, support, climbing and protection.

Arrangement of flowers is known as Inflorescence, which is of two types – racemose and cymose. A typical flower consists of four whorls – calyx, corolla, androecium and gynoecium. Arrangement of sepals or petals in flower is called aestivation, which are five types – valvate, twisted, imbricate, quincuncial and vexillary. Of these, androecium is composed of stamens, which may be free or united; Each stamen consists of filament, anther and connective, while gynoecium is made up of carpels, consists of stigma, style and ovary. Arrangement of ovules within ovary is known as placentation, which may be marginal, axile, parietal, basal and central. After fertilization, ovary is converted into fruit and ovules into seeds. There are three types of fruits – simple, aggregate and composite. Fleshy fruits are of three types – drupe, berry and pome. Seeds are either monocotyledonous or dicotyledonous, exospermic or endospermic. Floral features of any plant is exhibited by floral diagram and floral formula.

1. Fibrous root in maize develop from:
(a) Lower internodes (b) Lower nodes (c) Upper nodes (d) None of the above
2. Which of the following plants have root pockets?
(a) Eichhorinia (b) Capparis (c) Opuntia (d) Banyan
3. In which of following, the plants have all roots?
(a) Podostemon (b) Lemna (c) Wolffia (d) Utricularia
4. Food present in bulbil occurs in:
(a) Root (b) Stem (c) Leaf base (d) Petioles
5. From which part of root, root hairs develop ?
(a) Region of maturation (b) Region of elongation

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- (c) Meristematic region (d) Region of root cap
6. Epiphytic roots are found in :
(a) Indian rubber (b) Orchid 7. (c) Tinospora (d) Cuscuta
Potatoes are borne on :
(a) Primary roots (b) axil of scaly leaves
(c) Lateral roots (d) Adventitious roots
8. Some plants have rhizome 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) Rhizomes are thinner than roots (d) None of the above
9. Sweet potato is a modification of:
(a) Primary root (b) leaf (c) underground root (d) Adventitious root
10. Roots are differentiated into adventitious roots by their:
(a) Function (b) appearance (c) place of origin (d) position
11. Winged petiole is found in;
(a) citrus (b) acacia (c) radish (d) peepal
12. In one of the following the stem performs the function of storage and propagation:
(a) Ginger (b) Wheat (c) Radish (d) Groundnut
13. Leaves are attached to the stem at :
(a) Apical meristem (b) Internode (c) Nodes (d) Axillary meristem
14. Phyllotaxy refers to;
(a) Arrangement of leaves on stem (b) Folding leaf in the bud
(c) (a) & (b) both (d) None of the above
15. Plants with jointed stem and hollow internodes are known as :
(a) Clums (b) Scape (c) Ephemerals (d) Lianas
16. Bulbils take part in :
(a) Sexual reproduction (b) Respiration (c) Transpiration (d) Vegetative reproduction
17. Stem is very much reduced in:
(a) Tuber (b) Bulb (c) Corm (d) Rhizome
18. Turmeric is a stem and not a root because :
(a) It stores food material (b) It grows parallel to soil surface
(c) It has nodes and internodes (d) It has chlorophyll
19. A potato tuber is underground stem because:
(a) It has swollen and non-green
(b) It possesses axillary buds
(c) It possesses starch as stored food.

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- (d) It possess starch as stored food
20. Grasses are examples of the following type of stem:
(a) Suckers (b) Runners (c) Stolon (d) Rhizomes.
21. Red root is name of:
(a) Carrot (b) Sweet potato (c) Potato (d) Beet root
22. Tiny sacs or bladders are found in:
(a) Utricularia (b) salvinia (c) nepenthes (d) Hydrilla
23. 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
24. Smallest dicotyledonous parasitic plant of the world is: (JIPMER 1997)
(a) Coryadalis nana (b) Primula minutissima (c) Arcethobium minustissimum (d) Marsilea minuta
25. Adventitious roots: (AFMC:1994,Chandigadh CETs 1997)
(a) Develop from radical
(b) Develop from flower
(c) Develop from embryo
(d) Develop from any part of plant body except radical
26. The arrangement of leaves on stem is called:
(a) Venation (b) Vernation (c) Phyllotaxy (d) Axis
27. Stem modified into flattened photosynthetic structure is:
(a) Phyllode (b) Bulbil (c) Phylloclade (d) Tendril
28. Nodulated roots occur in: (R.P.M.T 1995)
(a) Leguminoceae (b) Solanaceae (c) Malvaceae (d) Papilionaceae
29. Insectivorous plants catch insects for obtaining:
(a) Na - K (b) Taste (c) Phosphorus (d) Nitrogen
30. Petiole is modified into tendril in
(a) Passiflora (b) Gloriosa (c) Pisum (d) clematis
31. Thorn is a stem structure because it:
(a) Develops from trunk (b) Develops from apical bud
(c) modification of bank floralbud (d) is pointed
32. Vegetative reproduction of Agave occurs through:
(a) Rhizome (b) Stolon (c) Bulbils (d) Sucker
33. What is the eye of potato ?
(a) Axillary bud (b) Accessory bud (c) Adventitious bud (d) Apical bud

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34. If a raceme inflorescence is branched , it is call?
(a) Umbel (b) spike (c) Cymose (d) Panicle
35. Zig-zag development of inflorescence axis is an example of:
a) Helicoid cyme b) Scorpioid c) Umbel d) Compound umbel
36. Opposite decussate phyllotaxy is found in:
a) Calotropis b) Mango c) Hibiscus d) Nerium
37. A brightly coloured bract like covering associated with the banana inflorescence is called:
a) Spathe b) Scape c) Spiral d) Scapigeron
38. Inflorescence is :
a) Number of flower present on an axis
b) Arrangement of flowers on an axis
c) Method of the opening of flower
d) Type of flower borne on peduncle
39. In monocot male gametophyte is: (C.B.S.E.1990)
a) Megaspore b) Nucleus c) Microspore d) Tetrad
40. A catkin of unisexual flower is found in:
a) Mulberry b) Wheat c) Onion d) Grass
41. Flower is a :
a) Modified cone b) Modified spike
c) Modified branch system d) Modified reproductive shoot
42. Flowers are always present in :
a) Cryptogamous (b) Pteridophytes
(c) Angiosperms (d) Bryophytes
43. 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
44. From the life cycle point of view the most important part of a plants is:
a) Flower b) Leaf c) Stem d) Root
45. The vexillum, (stan dard) wings and keel in pea flowers constitute:
a) Calyx b) Corolla c) Androecium d) Gynaecium
46. Diadelphous condition is present on:
a) Citrus b) Bombyx c) Pisum d) Brassica
47. Number of female flowers in a cyathium is:(keralaCET,05 UPCPMT,07 A.P.M.E.E. 1995)
a) One b) Two c) Three d) Many

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48. 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 calyx is colored
 - d) None of the above
49. Stamens with free anthers but filaments fused into a number of groups are;
- a) Polyadelphous b) Diadelphous c) Monadelphous d) Syngenesious
50. Pappus is a modification of :
- a) Calyx b) Corolla c) Stamens d) Gynoecium
51. Placentation in legumes is: (N.C.E.R.T.1988,C.P.M.T. 19977)
- (a) Basal (b) Marginal (c) Axile (d) Free central
52. The leaves are modified into tendrils, hooks, pitcher ,and bladder in the following plantsrespectively:
- a) sweet pea, bignonia, Nepenthes, Utricularia
 - b) sweet pea, bignonia, Utricularia, Nepenthes,
 - c) Nepenthes , bignonia, sweet pea, Utricularia
 - d) Utricularia, Nepenthes, bignonia, sweet pea
53. Leaf apex is modified into tendril in:
- a) Smilax (b) Gloriosa (c) Australian acacia (d) Pea
54. A fibrous root system is better adapted than tap root system for:
- a) Storage food (B.H.U. 1993)
 - b) Anchorage of plant to soil
 - c) Absorption of water and organic food.
 - d) Transport of water and organic food.
55. Which is not a stem modification? (A.F.M.C. 1988)
- a) Rhizome of Ginger
 - b) Corm of Colocasia
 - c) Pitcher of Nepenthes
 - d) tuber of potato
56. A pair of insectivorous plant is: (C.B.S.E. 1999)
- a) Dionaea and viscum b) Nepenthes and bladderwort
 - c) Drosera and rafflesia d) Venus fly and Rafflesia
57. A phyllode is a modified: (Kerala CET 2004)
- a) leaf b) stem c) root d) branch
58. An underground specialized shoot with reduced disc like stem covered by fleshy leaves is: (J.K.R.E.T. 2000)

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- a) bulb b) Rhizome c) rhizophore d) bulbil
59. Stipular tendril modification is found in : (Pb. PMT2001)
a) Smilax b) Pea c) Guava d) Mimosa pudica
60. Viscum is: (AFMC 2004)
a) total stem parasite b) total root parasite
c) partial stem parasite d) partial root parasite
61. Root pocket does not occur in : (Orrisa 2004)
a) Ipomoea b) Mangrove plants c) trapa d) pistia
62. Phylloclades are: (JKCMEE 2004)
a) leaf modification b) one internode and long stem
c) modified petioles d) green succulent stem of indefinite growth
63. Bladder of Utricularia and Pitchers of nepenthes are modifications of: (JKCMEE 2004)
a) leaves b) stems c) root d) flowers
64. Tallest gymnosperm : (AFMC 2006)
a) sequoia b) Eucalyptus c) Pinus d) Rannuncoulus
65. The “Eyes” of the potato tuber are : (A.P.M.T.2011)
a) Root buds b) Flower buds c) Shoot bud d) Axillary buds
66. Vexillary aestivation is characteristic of the family:
a) Asteraceae b) Solanaceae c) Brassicaceae d) Fabaceae
67. Mangrove plant live in:
a) Alpine Tundra (b) Tundra
(c) Marshy areas along rivers (d) Marshy areas along sea shore
68. Succulents are likely to be found in:
a)) Tropical rain forest (b) Deciduous forest
(c) Deserts (d) Tundra
69. In a compound umbel each umbellate is subtended by:
a) Involucre (b) Bracket
(c) Involucel (d) Bracteole
70. In the monocotyledonous seeds the endosperm is separated from the embryo by a distinct layer known as: (Kerala 2008)
a) testa (b) epithelial layer (c) tegmen (d) scutellum (e) coleoptile
71. The fleshy receptacle encloses a number of: (C.B.S.E. 2008)
a) Berries (b) achene (c) Unisexual flower (d) Samaras
72. The ovary is half inferior in flowers of : (A.I.P.M.T. 2011)
a) Peach (b) Cucumber (c) Cotton (d) Guava
73. Which one of the following statements is correct? (A.I.P.M.T. 2011)

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- 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.
74. Flowers are zygomorphic in : (A.I.P.M.T. 2011)
(a) Mustard (b) Gulmohar (c) Tomato (d) Datura
75. Phyllode is present in : (A.I.P.M.T. 2012)
(a) Euphorbia (b) Australian Acacia (c) Opuntia (d) Asparagus
76. Cymose inflorescence is present in: (A.I.P.M.T. 2012)
(a) Sesbania (b) Trifolium (c) Brassica (d) Solanum
77. 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 protective coating.
(c) A mature spore with enough reserve food and protective coatings
(d) A mature ovary with reserve food and protective coverings
78. In the maize grain , the starchy food is stored in:
(a) Cotyledons (b) Coleoptile (c) Aleurone layer (d) Endosperm
79. Which one of the following is not fruit?
(a) Cabbage (b) Apple (c) Watermelon (d) Tomato
80. What is the edible part of Mango?
(a) Epicarp (b) Mesocarp (c) Endocarp (d) Thalamus
80. (b)
81. A fruit in which the fruit wall (pericarp) and seed coat have got fused is called
(a) Legume (b) caryopsis (c) nut (d) drupe
82. A composite or multiple fruit develops from :
(a) Polycarpellary ovary (b) Bicarpellary and syncarpous ovary
(c) Apocarpous ovary (d) Inflorescence
83. Wheat grain is an example of :
(a) Achene (b) Caryopsis (c) Nut (d) Follicle
84. Which fruit is a type of nut?

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- (a) Ground nut (b) Oat (c) Walnut (d) Cashew nut
85. What is the edible part in coconut?
(a) Entire seed (b) Fruit wall
(c) Endosperm (d) None of the above
86. Water inside a coconut is : (Manipal PMT 1995)
(a) Liquid endosperm (b) Liquid endocarp
(c) Liquid Mesocarp (d) Liquid Nucleus
87. False fruit is a fruit which develops from:
(a) Ovary
(b) Any part of the flower except the ovary
(c) Apocarpous carpellary
(d) Syncarpous carpellary
88. Fibers are found on the seeds of:
(a) Calotropis (b) Gossypium (c) Alstonia (d) All of above
89. Which is the correct pair for edible part? (C.B.S.E.2001) (a) Tomato - Thalamus
(b) Maize – Cotyledons
(c) Guava - Mesocarp (d) Date palm- Pericarp
90. How many plants in the list given below have composite fruits that develop from an inflorescence?
(A.I.P.M.T. 2012)
Walnut, poppy, radish, pineapple, apple, tomato, mulberry.
(a) Five (b) Two (c) Three (d) Four
91. A characteristic of angiosperm is : (AFMC 1992,Hariyana,PMT, 1994)
(a) Flower (b) Root (c) Seed (d) All of these
92. The capacity for vegetative reproduction is found in:
(a) Leaves (b) Roots (c) Stem (d) All of above
93. _____ are the vegetative organs of the flowering plants:
(a) Root ,stem, flower (b) Leaves ,stem, fruits
(c) Roots, leaves, flowers (d) Roots, stem, leaves
94. A root can be differentiated from the stem because of the absence of :
(a) Green colour (b) Nodes and internodes
(c) Hair (d) Branches
95. Which one of the following is not a characteristic of root:
(a) Presence of root tap (b) Presence of unicellular hair
(c) Presence of chlorophyll (d) Absence of buds

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96. When the trunk is unbranched and bears crown of leaves at its apex, it is known as :
(a) Runner (b) Sucker (c) Caudex (d) Culm
97. Parallel venation is a characteristic of :
(a) Legumes (b) Grasses (c) Parasitic plants (d) Xerophytic plants
98. Leaf morphology helps in :
(a) Plant identification (b) Plant classification
(c) None of these (d) (a)&(b) both
99. When the stem or its branch ends into floral bus:
(a) Vegetative growth starts
(b) Reproductive growth starts
(c) Lateral branch is given out
(d) Apical growth is stimulated
100. Root that grow from any part of the plant body other than the radical are called? (AFMC 2010)
(a) Tap root (b) Adventitious root
(c) Modified roots (d) Aerial roots
101. ____require more than two growing seasons to complete their life cycle.
(a) Annual (b) Perennials (c) Biennials (d) Herbs
102. Modified stem of _____ protect the plant from grazing animal.
(a) *Datura festuosa* (b) *Aloe vera* (c) *Gloriosa superba* (d) *Carissa carandus*
103. Which of the following is actually not a flower?
(a) Shoe flower (b) Sun flower (c) Rose (d) Pea
104. Beauty of Bougainvillea flower are: (AFMC, 1997)
(a) Corolla (b) Calyx (c) Bracts (d) Androecium
105. Flower in which only set of one essential organ develops are call: (Kerala,PMT,04)
(a) Unisexual (b) Monoecious (c) Dioecious (d) Polygamous
106. Individual components of Perianth are call:
(a) Sepals (b) Petals (c) Tepals (d) Brackets
107. Brinjal show _____ calyx.

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

108. The hairs present in maize corn cob are: (AIPMT,2000,2006)

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

Seed is :

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

110. A pome fruit is said to be false because: (CPMT 2000)

- (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 inferior ovary

111. Geocarpic fruit is : (AIPMT 2002)

- (a) Potato (b) Pea nut (c) Onion (d) Garlic

112. Unifoliate leaf is found in: (BHU2002)

- (a) Pea (b) Citrus (c) Royal palm (d) Oil palm

113. Drupe has : (UGET Manipal, 2004)

- (a) hard Epicarp (b) hard endocarp
(c) hard mesocarp (d) no epicarp

114. Zygomorphic condition can be represented as: (UP CPMT,, 2009)

- (a) \square (b) % (c) P (d) G

115. Which of these characters do not belong to Compositae?(CPMT,1991)

- (a) Ligulate ray flowers (b) Basal ovules
(c) Syngenesious stamens (d) Five lobed stigma

116. An inflorescence always forms a : (Punjab PMT 1997)

- (a) Multiple or composite fruit (b) Simple fruit
(c) Dry dehiscent fruit (d) Aggregate fruit

117. Which of the following pairs is not correct? (J & k, 2004)

- (a) Corymb - Candytuft (b) Capitulum - sunflower
(c) Catkin – Mulberry (d) Raceme – Wheat

118. Find the incorrect match.

- (a) Stilt root - turnip
(b) Tap root - carrot
(c) Adventitious root - sweet potato
(d) Prop root- banyan tree

119. Which of the following is a wrong pairing?

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- (a) Raceme - Mustard
- (b) spike - Achyranthus
- (c) compound umbel - Onion
- (d) spadix - musa

120. The correct match for edible part of fruit is: (AIPMT,CBSE 2001)

- (a) Guava – pericarp with thalamus
- (b) Tomato – thalamus
- (c) Maize – cotyledon
- (d) Date palm – epicarp

121. The correct match for Branching

Colum I

Colum II

- (P) Mirabilis I sympodial
- (Q) Polyalthia II dichotomous
- (R) Vitis III monopodial axis
- (S) Hyphaene IV Cymose
- (a) (P)-III, (Q) – IV, (R)-I, (S)-II
- (b) (P)-I, (Q)- IV, (R)- III, (S)- II
- (c) (P) - IV ,(Q) - III (R)-I, (S)-II
- (d) (P)-IV (Q)- III, (R)- II , (S)- I

122. Select the correct pair

Colum I

Colum II

Colum III

- | | | |
|------------------------|-------------------|--------------|
| (a)Unilocular Ovary | (p) Five Chamber | I Petuna |
| (b) Bilocular Ovary | (q) Three Chamber | II Asparagus |
| (c) Trilocular Ovary | (r) One Chamber | III Hibiscus |
| (d) Pentalocular Ovary | (s) Two Chamber | IV Sunflower |

A:(a)- (r)- IV, (b)-(s)-III ,(c)- (p)-II, (d)- (q) -I

B:(a)- (r)- IV, (b)- (s)-I, (c)- (q)- II, (d)- (p)-III

C:(a)- (s) -I, (b)- (r)- II,(c)- (q)- IV, (d)- (p)-III

D:(a) -(q)-II, (b)- (r)-I (c)- (s)- III, (d)- (p)-IV

123. Select the correct pair

- | | | | |
|-------------------|-------------------------|-----|-----|
| (P) Onion | (I) tubers | | |
| (Q) pea | (ii)phylloclade | | |
| (R) Potato | (iii) tunicated bulb | | |
| (S) muehlenbeckia | (iv)foliaceous stipules | | |
| (P) | (Q) | (R) | (S) |

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- (A) (iii) (iv) (ii) (I) (B) (iv) (iii)
 (I) (ii)
 (c) (iii) (I) (iv) (ii)
 (D) (iii) (iv) (I) (ii)

124. Match the following with correct combination.

- | Column I | Column II |
|--|---------------------------------------|
| (P) Marginal Placentation | I Petunia |
| (Q) Axial Placentation | II Dianthus |
| (R) Free central Placentation | III Mustard |
| (S) Parietal Placentation | IV Pea |
| (a): (P)- II, (Q)- I, (R)-IV, (S)-III | (b): (P)-III, (Q)-IV, (R)-II, (S)- I |
| (c): (P)- IV, (Q) – I, (R)-II, (S)-III | (d): (P)-IV, (Q)– I, (R)-III, (S)- II |

125. Match list I with list II and select the correct answer using the codes given below the lists.

- | List I | List II |
|------------------------|---------------|
| P. Total stem parasite | I Loranthus |
| Q. Assimilatory root | II Pothos |
| R. clinging root | III Tinospora |
| S. partial parasite | IV cuscuta |
-
- | | P | Q | R | S |
|-----|----|-----|-----|----|
| (a) | IV | II | III | I |
| (b) | IV | III | II | I |
| (c) | II | III | I | IV |
| (d) | II | IV | III | I |

126. Match list I with II types of leaves

- | List I | List II |
|--------------------------------|------------------|
| (p) leaf included with in seed | I scaly leaf (q) |
| small or papery leaf | II bract |
| (r) stamen and Carpel | III seed leaf |
| (s) which a flower develops is | IV soprophylls |
-
- | | P | Q | R | S | | P | Q | R | S |
|-----|-----|----|----|----|-----|-----|-----|----|----|
| (a) | III | I | IV | II | (b) | I | III | II | IV |
| (c) | III | IV | I | II | (d) | III | II | I | IV |

127. Match sign with select the correct answer using the codes given below the lists.

- | I | II |
|---------------------|----------------------|
| P. C ₍₄₎ | I six free tapals |
| Q. K ₄ | II four fused petals |

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R. P_6 III four free sepals

R. A_4 IV four free stamens p Q

R S

(a) I II III IV (b) IV III II I

(c) II III I IV

(d) IV I III I

128. Select the wright pair :

(a) Mustard plant : \square , &, K_{2+2} , C_4 , A_{2+4} , $\underline{G}_{(2)}$

(b) Legume : Br, $\square\square\square$ &, K_5 , $C_{1+2+(2)}$, $A_{1+(9)}$, \underline{G}_1

(c) Solanum: Ebr, \square &, $K_{(5)}$, $C_{(5)}$, A_5 , $\underline{G}_{(2)}$

(d) Asphodelus: Br \square &, P_{3+3} , C_4 , A_{3+3} , $\underline{G}_{(3)}$

129. Labeling the following diagram:

- (a). p-leaf q. -stem .r. - fruit s- flower
- (b). p- flower q- stem r- leaf s- fruit
- (c). p- leaf q- stem r- flower, s- fruit
- (d). p- flower q- leaf r- stem s- fruit



130. Which plant is this and live in _____ habitat.

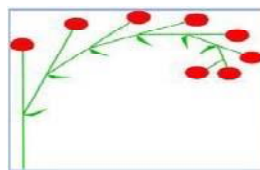
- (a) Opuntia , ever green
- (b) Muehlenbevkiea, dry
- (c) Dioscorea , thorn
- (d) Agave , desert



forest

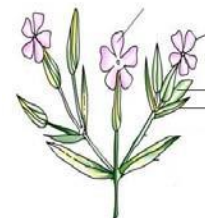
131. Identify the inflorescence

- (a) Raceme
- (b) Spike
- (c) Helicoid
- (d) Scorpioid



132. Give the name in following

- (a) P-terminal bud , q-old flower r-floral bud, s-leaf
- (b) P- terminal bud, q- floral bud, r- old flower, s- leaf
- (c) P- old flower, q- terminal bud r- leaf s-floral bud
- (d) P- leaf, q- floral bud, r- old flower, s- terminal bud



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133. Name of the following aestivation type:

- (a) Valvate
- (b) Twisted
- (c) Imbricate
- (d) Quincuncial



134. Labeling the given figure :

- (a) P- stigma q- style
- (b) P- anther q- filament
- (c) P anther q- style
- (d) P- stigma q- filament



135. Identify this plant and Select the correct

- (a) Sweet potato – simple tuberous root
- (b) Dahlia – fasciculated tuberous root
- (c) Asparagus – simple tuberous root
- (d) Beet – tap root



modification option



136. Labeling 'p' in root

- (a) Velamen tissue
- (b) Meristematic
- (c) Growth tissue
- (d) Fleshy tissue



X section

tissue

137. Name the labeled 'x' in

- (a) Thorn
- (b) Hook
- (c) Prickles
- (d) Stipules



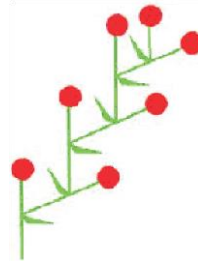
plant

138. Choose correct option according to given leaf:

- (a) Moringa – multipinnate compound leaf
- (b) Balanites- Bifoliate compound leaf
- (c) Caesalpinia - bipinnate compound leaf
- (d) Aegle – multifoliate

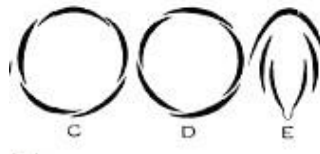
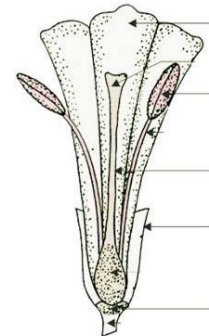
139. Choose the correct option by given diagram :

- (a) Scorpioid - Heliotropium
- (b) Scorpioid - Hamelia
- (c) Spike - Achyranthus
- (d) Spike – musa



140. Name the labeled flower part.p

- (a) P-peduncle, q-ovary r-stigma, s-calyx, t-thalamusq
- (b) P-corolla, q-anther, r-stigma, s-calyx, t- peduncle
- (c) P-petals, q-style, r-stigma, s-stamen, t- ovaryr
- (d) P- corolla, q- anther , r-style, s-calyx t- thalamuss



141. Choose correct option by giving diagram:t

- (a) C- vexillary, D- Quincuncial , E- Imbricate
- (b) C- vexillary , D- Imbricate , E- Quincuncial,
- (c) C-Imbricate , D-Quincuncial, E-vexillary
- (d) C- Imbricate , D- vexillary , E-Quincuncial

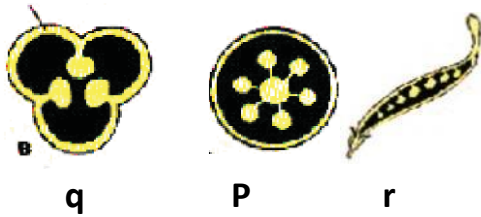
142. Choose correct option

Column 1 Column2

- (p) polydelphous I china rose
- (q) monodelphous II pea
- (r) diadelphous III citrus
- (a) P- III, q-I, r-II
- (b) P- III q-II, r- I
- (c) P-I, q- III ,r-II
- (d) P-II, q- III ,r-I

143. Choose the correct option by given placentation

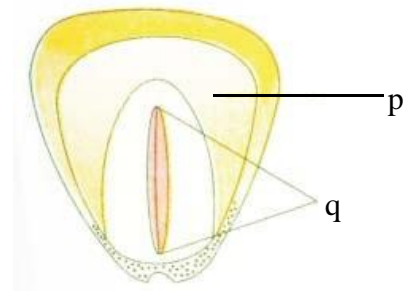
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- (a) P-free central-Dianthus, q- parietal-Tomato, r-Marginal -Bean
 (b) P- parietal-Tomato, q- Marginal -sunflower ,r- free central- Bean
 (c) P-parietal-Argemone, q- free central- Bean, r- Marginal -sunflower
 (d) P-free central-Dianthus, q- parietal-Argemone, r-Marginal –Bean

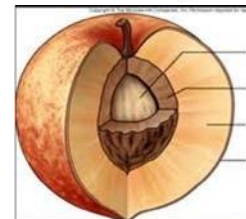
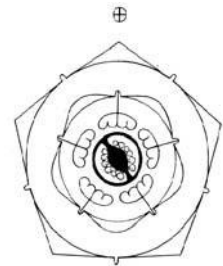
144. Name the labeling part of given diagram:

- (a) P – Endosperm q- embryo
 (b) P-seed coat q- coleoptile
 (c) P- Endosperm q- cotyledon
 (d) P- seed coat q –embryo



145. Name in given floral diagram:

- (a) P-Calyx, q-Corolla, r-Androecium, s- Gynoecium, t- Mother axis
 (b) P-Calyx, q-Androecium, r- Gynoecium, s- Corolla, t-Mother axis
 (c) P- Corolla, q- Calyx, r-Androecium, s- Gynoecium, t- Mother axis
 (d) P- Corolla , q- Calyx ,r- Gynoecium , s Androecium -t- mother axis



- (a). p-seed, q-endocarp, r-mesocarp, s-exocarp
 (b). p-endocarp, q- seed, r- exocarp , s-

mesocarp

- (c). p- seed, q-endocarp, r-mesocarp, s- exocarp
 (d). p-endocarp, q- seed, r- exocarp , s-mesocarp

S- R Type MCQ's

S= Statement

R= Reason

- (A) S and R both are true, where R is definition of S
 (B) S and R both are true, where R is not reason of S
 (C) S is true, R is false
 (D) S is false , R is true

147. S: leaf to prepare food by carrying out photosynthesis

R: Leaf to arrange gaseous exchange for respiration

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- (A) (B) (C) (D)
148. S: The loranthus plant possess nodules on their root system
R: Rhizobium bacteria live in root nodules
(A) (B) (C) (D)
149. S: In perigynous flower , the thalamus becomes flat, disc like R: The flower whorls are arranged on the rim of the thalamus
(A) (B) (C) (D)
150. S: In caryopsis the pericarp and seed coat are fused and form a ‘hull’
R: Tridax and vernonia are example of caryopsis
(A) (B) (C) (D)
151. S: Gloriosa superba is a scientific name of vachhnag
R: vachhange having reticulate venation
(A) (B) (C) (D)

ANSWER KEY

1. (B)	26.(C)	51.(B)		76.(D)	101.(B)	126
)))	.(A)
2.(A)	27.(C)	52.		77.(B)	102.(D)	127.
)	(A))	(C)
3(A)	28.(A)	53.(B)		78. (D)	103(B)	128.(D)
)))
4(C)	29(D)	54(B)		79.(A)	104.(C)	129.(C)
))
5(B)	30.(D)	55(C)		81.(B)	105.(A)	130 .
)))	(B)
6(B)	31.(B)	56(B)		82..(D)	106.(C)	313.
)))	(C)
7. (B)	32.(C)	57.(A)		83.	107.(D)	132.(A)
))		.(B)))
8.(B)	33.(A)	58.		84.(D)	108.	133.(D)
)	(A)			(A))
9.(D)	34.	59.		85. (C)	109.(D)	134.(B)
	(D)	(A)))
10.(35.(A)	60.(C)		86.(A)	110.(C)	135.(B)
C)))))

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11.(A)	36. (A)	61.(D)		87.(B)	111.(B)	136.(A)
12.(A)	37.(A)	62.(D)		88.(D)	112.(B)	137.(C)
13.(C)	38.(B)	63.(A)		89.(B)	113. (B)	138.(C)
14.(A)	39.(C)	64. (A)		90.(C)	114.(B)	139.(A)
15.(A)	40. (A)	65.(D)		91(A)	115.(D)	140.(D)

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16. (D)	41(D)	66(D)		92.(D)	116.(A)	141.(C)
17. (B)	42.(C)	67. (D)		93.(D)	117. (D)	142.(A)
18.(C)	43.(A)	68.(C)		94.(B)	118.(A)	143.(D)
19.(B)	44.(A)	69.(B)		95.(C)	119.(C)	144.(A)
20.(B)	45.(B)	70.(B)		96(C)	120. (A)	145.(B)
21.(D)	46(C)	71.(C)		97.(B)	121(C)	146(C)
22.(A)	47.(A)	72.(A)		98.(D)	122. (B)	147.(B)
23.(B)	48.(A)	73.(D)		99.(B)	123. (D)	148.(D)
24(C)	49.(A)	74.(B)		100.(B)	124. (C)	149.(A)
25(D)	50.(A)	75. (B)			125 (B)	150.(C)
						151.(B)

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