

Choose the correct answers :

1. Which of the following plants show vivipary ?
(1) *Rhizophora* (2) Coconut
(3) *Bryophyllum* (4) All of these
2. Which is not a monocarpic plant ?
(1) Bamboo (2) Agave
(3) Mango (4) Both (1) and (2)
3. Photosynthetic roots are found in
(1) *Trapa* (2) *Pandanus*
(3) *Bryophyllum* (4) *Dahlia*
4. One internode long thick, short runner is called
(1) Stolons (2) Turions
(3) Offsets (4) Phyllode
5. The roots that develop from coleorhiza is called
(1) Seminal roots (2) Stilt roots
(3) Prop roots (4) Buttress roots
6. Of the following which one is homologous?
(1) Root and rhizoid
(2) Stamen and Scale
(3) Lateral branch and flower
(4) None of these
7. In which of the following the plants are all roots ?
(1) *Podostemon* (2) *Lemna*
(3) *Tinospora* (4) *Trichosanthes*
8. Green photosynthetic roots occur in
(1) *Cuscuta* (2) *Asparagus*
(3) *Tinospora* (4) *Pandanus*
9. Potatoes are borne on
(1) Lateral roots (2) Adventitious roots
(3) Primary roots (4) Stolons
10. Leaf apex is modified into a tendril in
(1) *Gloriosa* (2) *Smilax*
(3) *Pisum sativum* (4) *Lathyrus aphaca*
11. In *Parkinsonia aculeata*, what is modified into phyllode ?
(1) Petiole (2) Primary rachis
(3) Secondary rachis (4) Leaflets
12. A monocot having reticulate venation is
(1) *Smilax* (2) Banana
(3) *Canna* (4) Orchid
13. *Viscum*, *Loranthus* and *Dendrothe* are
(1) Partial stem parasites
(2) Total stem parasites
(3) Total root parasites
(4) Partial root parasites
14. Phylloclade of one or two internodes is known as
(1) Phyllode (2) Cladode
(3) Bladder (4) Bulbil
15. A unipinnate compound leaf looks very much like an ordinary branch with simple leaves. It can be differentiated from the branch in the following way
(1) The compound leaf has a terminal bud
(2) The compound leaf has axillary buds
(3) The branch has axillary buds in the axil of the leaves
(4) Both (2) & (3)
16. Thorn is a modified branch because
(1) It is a hard, straight and pointed structure
(2) It is a part of the plant
(3) It arises in the axil of a leaf
(4) It looks like a branch
17. Phyllode is a modified
(1) Stem (2) Leaf
(3) Climber (4) Shrub
18. Underground modification of stem is primarily meant for
(1) Growth (2) Storage of food
(3) Perennation (4) Vegetative reproduction
19. The stem is extremely reduced in
(1) Bulb (2) Corm
(3) Tuber (4) Rhizome
20. Petioles are modified into tendril in
(1) *Antigonon* (2) *Clematis*
(3) *Passiflora* (4) *Gloriosa*
21. Food is stored in a bulb within
(1) A swollen stem
(2) Swollen leaf bases
(3) Enlarged roots
(4) The inflorescence
22. In which of the following plants does the stem perform the functions of storage and perennation ?
(1) Groundnut (2) Ginger
(3) Wheat (4) Radish
23. Ginger is a stem and not root because
(1) It stores food
(2) It is bitter in taste
(3) It has nodes and internodes
(4) It is non-green in colour
24. On the margins of leaves of *Bryophyllum*, there are many tiny plants that grow completely with roots. These tiny plants fall off and continue to grow. This is a form of
(1) Vegetative reproduction
(2) Sexual reproduction
(3) Hermaphroditism
(4) Reproduction by fission

25. The plant with largest flower is a
 (1) Total root parasite
 (2) Total stem parasite
 (3) Partial root parasite
 (4) Partial stem parasite
26. Branches of stem are
 (1) Exogenous in origin
 (2) Endogenous in origin
 (3) Partly endogenous and partly exogenous
 (4) All of these
27. Leafless stem of onion which is produced to bear flowers is called
 (1) Peduncle (2) Scape
 (3) Floral axis (4) Rachis
28. The small rootless aquatic herb in which a portion of leaf forms a tiny sac or bladder to trap water insects is
 (1) *Dionaea* (2) *Utricularia*
 (3) *Nepenthes* (4) *Drosera*
29. *Cuscuta* is a
 (1) Total stem parasite
 (2) Partial stem parasite
 (3) Total root parasite
 (4) Partial root parasite
30. Vernation is a term used to denote
 (1) The arrangement of veins in the leaf
 (2) The folding of the leaf in the vegetative bud
 (3) The arrangement of leaves in the bud with reference to other leaves
 (4) The arrangement of leaves on the stem
31. Respiratory roots are found in
 (1) *Viscum* (2) *Vanda*
 (3) *Jussiaea* (4) *Tinospora*
32. Sucker which is a subaerial stem modification for vegetative propagation is seen in
 (1) *Hydrilla* (2) *Chrysanthemum*
 (3) *Pistia* (4) *Jussiaea*
33. In *Passiflora*, a weak-stemmed plant, the tendrils are modification of
 (1) Stipules (2) Leaves
 (3) Axillary buds (4) Terminal leaflets
34. Phyllotaxy is the mode of arrangement of leaves and the principle underlying is to
 (1) Minimize the number of leaves in a branch
 (2) Increase the number of leaves in a branch
 (3) Hide leaves against sunlight
 (4) Expose leaves equally to sunlight
35. *Santalum album* is
 (1) Complete root parasite
 (2) Partial root parasite
 (3) Complete stem parasite
 (4) Partial stem parasite
37. Reticulate venation, unisexual flowers and stipular tendrils are found in
 (1) *Smilax* (2) *Ficus*
 (3) *Dracaena* (4) *Yucca*
38. The type of growth of buds in conifers is
 (1) Excurrent (2) Caudex
 (3) Lateral (4) Deliquescent
39. Foods stored in aroids is within
 (1) Swollen stem
 (2) Swollen leaf bases
 (3) Enlarged roots
 (4) Inflorescence
40. Which of the following feature distinguishes a monocot from a dicot plant ?
 (1) Aestivation (2) Vernation
 (3) Phyllotaxy (4) Venation
41. Which one of the following regenerates with the help of layering ?
 (1) Jasmine (2) Rose
 (3) Mango (4) Cactus
42. Vegetative reproduction in *Agave* is by
 (1) Rhizome (2) Tuber
 (3) Stolon (4) Bulbils
43. In which of the following plants does the stem perform the functions of storage and perennation ?
 (1) Groundnut (2) Ginger
 (3) Wheat (4) Radish
44. A lianas is a
 (1) Herb (2) Vine
 (3) Tree (4) Shrub
45. Velamen is a tissue found in
 (1) Parasites
 (2) All saprophytes
 (3) Aerial roots of some orchids
 (4) Halophyte
46. *Muehlenbeckia* (= *Cocoloba*) is an example of
 (1) Phylloclade (2) Phyllode
 (3) Stem tuber (4) Root tuber
47. Root pockets acts as balancers and are found in
 (1) Hygrophytes
 (2) Free floating hydrophytes
 (3) Fixed floating hydrophytes
 (4) Submerged hydrophytes
48. A plant that is first terrestrial and then become epiphyte is
 (1) *Neottia* (2) *Wulfschlegellia*
 (3) *Scindapsus* (4) *Vanda*
49. The lenticels or breathing pores in respiratory roots are called
 (1) Hydathodes (2) Pneumathodes
 (3) Stomata (4) Pneumatophores

50. Smallest cladode occurs in
 (1) *Lemna* (2) *Azolla*
 (3) *Wolffia* (4) *Parkinsonia*
51. A dicot leaf with parallel venation is
 (1) *Calophyllum (Alexandrian laurel)*
 (2) *Corymbium*
 (3) *Eryngium*
 (4) All of these
52. Leaves arising from an underground stem like bulb are called radical leaves. The leaves arising on the nodes of aerial branches are called
 (1) Cauline (2) Ramal
 (3) Caducous (4) Deciduous
53. What type of leaf is found in *Mimosa* (sensitive plant) ?
 (1) Simple (2) Bipinnate compound
 (3) Decompound (4) Tripinnate compound
54. Roots are absent in
 (1) *Myriophyllum*
 (2) *Ceratophyllum*
 (3) *Utricularia and Wolffia*
 (4) All of these
55. The term Torus is related with
 (1) Thalamus
 (2) Swelling of pit membrane
 (3) Both thalamus and pit swelling
 (4) Spongy thalamus of lotus
56. In *Pandanus* (Screwpine) root cap is
 (1) Simple, multicellular
 (2) Multiple, multicellular
 (3) Absent
 (4) Replaced by root pocket
57. The graviperception (geotropic response) of root is due to starch grains (statoliths) in
 (1) Cells of root cap
 (2) Cells of root hairs
 (3) Cells in root apex
 (4) Cells in growing point
58. Epiphytes are ectocommensal space parasites. They are dependent on other plants for
 (1) Shelter (2) Water and minerals
 (3) Water (4) Water and food
59. In cymose tap root system
 (1) Tap root is not elongated and deep
 (2) Secondary roots are horizontal and near soil surface
 (3) Surface feeder
 (4) All of these
60. Tip of twiner is sensitive and coils around support itself. This coiling is called
 (1) Nutation (2) Vernation
 (3) Epinasty (4) Circination
61. Presence of two types of leaves on same node as in *Boerhaavia* is called
 (1) Heterophylly (2) Anisophylly
 (3) Omniphylly (4) Anemophily

Choose the correct answers :

1. Naked pedicellate, tricarpeillary female flower surrounded by many naked male flowers is characteristic of
 - (1) Verticillaster (2) Cyathium
 - (3) Hypanthodium (4) Coenanthium
2. In racemose inflorescence, the peduncle produces an unlimited no. of flowers _____
 - (1) Basipetally (2) Acropetally
 - (3) Both (1) and (2) (4) None of these
3. Parachute fruits present in
 - (1) *Sonchus* (2) *Tecoma*
 - (3) Poppy (4) *Hiptage*
4. Cauliflower, used as vegetable, is
 - (1) Terminal bud with immature leaves
 - (2) Fleshy unripe inflorescence
 - (3) Fruit
 - (4) Swollen stem
5. When only one lateral branch is produced at a time on alternate side the branching is
 - (1) Scorpioid (2) Helicoid
 - (3) Dichasial (4) Polyichasial
6. The special type of inflorescence found in *Ficus*, where the flowers are inconspicuous and enclosed within a cup like fleshy thalamus is called
 - (1) Cyathium (2) Verticillaster
 - (3) Spadix (4) Hypanthodium
7. What will we call this condition of A_{2+4} which is a characteristic of crucifers ?
 - (1) Didynamous (2) Tetradyndamous
 - (3) Homostamenous (4) Obdiplostamenous
8. When the sepal is inferior, the flower is said to be
 - (1) Hypogynous (2) Perigynous
 - (3) Epigynous (4) Polygamous
9. The fruit which develops from ovary in collaboration with thalamus is called
 - (1) False fruit (2) Simple fruit
 - (3) Succulent fruit (4) Dry fruit
10. The carpels of *Solanum* flower are oblique because
 - (1) The posterior and the anterior carpels move to the left
 - (2) The posterior carpel turns to the left and anterior to right
 - (3) The posterior and anterior carpels turn by 180°
 - (4) The posterior carpels turn to the right and the anterior to the left
11. Gynobasic style is characteristic of
 - (1) Labiatae (2) Solanaceae
 - (3) Gramineae (4) Liliaceae
12. Which is the floral formula of tobacco?
 - (1) $\oplus \underset{\uparrow}{\ominus} P_2 A_3 \underline{G}_1$
 - (2) $\oplus \underset{\uparrow}{\ominus} K_{4-5} C_{4-5} A_{10} \underline{G}_1$
 - (3) $\oplus \underset{\uparrow}{\ominus} K_{2+2} C_4 A_{2+4} \underline{G}_{(2)}$
 - (4) $\oplus \underset{\uparrow}{\ominus} K_{(5)} \overset{\frown}{C}_{(5)} A_{(5)} \underline{G}_{(2)}$
13. In a compound umbel inflorescence, each umbellule is subtended by
 - (1) Lodicules (2) Coloured bract
 - (3) Involucel (4) Involucre
14. Hypanthodium and cyathium type of inflorescence possess
 - (1) All type of flowers
 - (2) Only bisexual flowers
 - (3) Unisexual flowers
 - (4) All of these
15. Ligulate corolla is a characteristic features of
 - (1) Ray floret of sunflower
 - (2) Disc floret of sunflower
 - (3) Bilipped corolla of *Salvia*
 - (4) Bell shaped corolla of *Campanula*
16. Versatile anther are found in
 - (1) *Brassica* (2) *Ranunculus*
 - (3) *Passiflora* (4) Grasses
17. Corona is
 - (1) Nectar secreting glands of plants
 - (2) Outgrowth of different floral organs
 - (3) Outgrowth of petals
 - (4) Alternative name of perianth
18. Gynostegium in *Calotropis* arise due to
 - (1) Fusion of stamen with calyx
 - (2) Fusion of stamen with corolla
 - (3) Fusion of anthers and stigmas
 - (4) Fusion of stamen with tepals
19. If seed is defined as an ovule modified as a result of fertilization, one may expect to find seed in
 - (1) Phanerogams
 - (2) All vascular plants
 - (3) Angiosperms only
 - (4) Gymnosperms only
20. Seeds of gram and pea are
 - (1) Hypogeal and albuminous
 - (2) Hypogeal and exalbuminous
 - (3) Epigeal and exalbuminous
 - (4) Epigeal and albuminous

21. An inflorescence in which flowers arise from different points but reach the same level is known as
 (1) Spadix (2) Catkin
 (3) Corymb (4) Umbel
22. Syngenesious condition is
 (1) When filaments of stamens are fused and the anthers are free
 (2) When filaments are free and the anthers are fused
 (3) When both the filaments and the anthers are fused
 (4) When all the carpels in a gynoecium are fused
23. Tetradyamous condition of androecium is that in which
 (1) All the stamens are fused
 (2) 4 stamens are long and 2 are short
 (3) 4 stamens are short and 2 are long
 (4) 2 stamens are long and 2 are short
24. Arrangements of sepals and petals with respect to each other in floral bud is called
 (1) Vernation (2) Venation
 (3) Aestivation (4) Phyllotaxy
25. Empty glumes are modified
 (1) Stamens (2) Carpels
 (3) Petals (4) Bracts
26. Pollinia are sac like structures
 (1) In which anther lobes are present
 (2) Which are present in megasporangia
 (3) Which secrete yellow substance called pollenkit material
 (4) In which pollen grains are present in mass
27. The inflorescence in mulberry is
 (1) Raceme (2) Spadix
 (3) Catkin (4) Capitulum
28. Synandrium means fusion of
 (1) Only the anthers
 (2) Both filaments and anthers
 (3) Only filaments
 (4) Part of the stamens
29. When an ovule is straight but stands at right angle to the funicle and is fixed to it at the middle of the chalaza and micropyle, it is called
 (1) Amphitropous
 (2) Orthotropous
 (3) Anatropous
 (4) Campylotropous
30. The most important function of an inflorescence is to help in
 (1) Dispersal of seeds
 (2) Release of pollen grains
 (3) Attracting insects for cross-pollination
 (4) Forming large number of fruits
31. Anthesis is
 (1) Transverse splitting of the anther
 (2) Longitudinal splitting of the anther
 (3) Opening of the flower
 (4) Removal of the anther
32. Translator apparatus is seen in
 (1) Ovules of mustard
 (2) Pollen grains of mango
 (3) Pollinia of *Calotropis*
 (4) Ovules of pea
33. When dichasial cyme ends in a monochasial cyme the inflorescence is
 (1) Uniparous (2) Biparous
 (3) Cincinnus (4) Verticillaster
34. A floral formula represents the
 (1) Symmetry of the flower
 (2) Position of the flower
 (3) Diagrammatic notation of the floral characteristics
 (4) Functions of the flower
35. Epicalyx represents
 (1) A whorl of bracts
 (2) A whorl of bracteoles
 (3) Involucre
 (4) An additional whorl of calyx
36. Hypanthodium is a characteristic inflorescence of
 (1) Mulberry (2) *Poinsettia*
 (3) *Ficus* (4) Pineapple
37. If the scorpioid type of inflorescence has the branches in angular planes it is known as
 (1) Cincinnus (2) Rhipidium
 (3) Bostryx (4) Drepanium
38. When the anthers and stigmas mature at the same time it is known as
 (1) Xenogamy (2) Homogamy
 (3) Dichogamy (4) Allogamy
39. The *Yucca* flower is pollinated by
 (1) Honey bee (2) Bumble bee
 (3) *Pronuba* moth (4) Butterfly
40. Pollination which occurs in closed flower is known as
 (1) Allogamy (2) Cleistogamy
 (3) Dicliny (4) Protogyny
41. Allogamy is best favoured by
 (1) Dichogamy (2) Cleistogamy
 (3) Dicliny (4) Homogamy
42. Insect-pollinated flowers usually possess
 (1) Dry pollens with smooth surface
 (2) Sticky pollens with rough surface
 (3) Large quantities of pollen
 (4) Brightly coloured pollens

43. Pollen grains of flowers pollinated by insects or wind are not
 (1) Large and showy
 (2) Rough and sticky
 (3) Smooth and dry
 (4) Rough and dry
44. Anthophore is
 (1) Internode between calyx and corolla
 (2) Internode between corolla and androecium
 (3) Internode between the androecium and gynoecium
 (4) The modified thalamus
45. Wind pollinated plants differ from insect pollinated plants in having
 (1) Small petals and sticky pollen
 (2) Small coloured petals and heavy pollen
 (3) Coloured petals and large pollens
 (4) No petals and light pollen
46. A dry fruit which develops from a bicarpellary ovary with parietal placentation and dehiscent from below upward is known as
 (1) Legume (2) Capsule
 (3) Follicle (4) Siliqua
47. Multiple fruits are those which are produced by
 (1) Several ripened ovaries of a single flower
 (2) Several ripened ovaries of several flowers of an inflorescence
 (3) Parts other than ovary
 (4) Fusion of calyx with ovary
48. In *Mimosa pudica* placentation is
 (1) Parietal (2) Basal
 (3) Axile (4) Marginal
49. Schizocarpic fruits are those which
 (1) Arise from an inflorescence
 (2) Develop from apocarpous pistil
 (3) Have fleshy pericarp
 (4) Break up into mericarps
50. Largest inflorescence is found in
 (1) *Acalypha* (2) *Populus*
 (3) *Amorphophallus* (4) Cabbage
51. The most advanced type of inflorescence is
 (1) Corymb (2) Catkin
 (3) Spadix (4) Capitulum
52. Rachilla represents
 (1) Axis of cymose inflorescence
 (2) A type of inflorescence
 (3) Axis of spikelet
 (4) None of these
53. Zig-Zag development of inflorescence axis is an example of
 (1) Helicoid cyme (2) Verticillaster
 (3) Scorpioid cyme (4) Umbel
54. Cyathium inflorescence shows
 (1) Similar type of flowers
 (2) One central male flower surrounded by the female flowers
 (3) One central female flower surrounded by many male flowers
 (4) Sessile flowers on long axis
55. A gamopetalous funnel like corolla is called
 (1) Campanulate (2) Bilabiate
 (3) Infundibuliform (4) Caryophyllaceous
56. Protandry is the situation when
 (1) Anthers mature later than the stigmas of the same flower
 (2) Anthers mature earlier than the stigmas of the same flower
 (3) Anthers of a flower pollinate stigmas of the same flower
 (4) Anthers and stigmas mature at the same time
57. Bell shaped calyx is characteristics of
 (1) Chinrose (2) *Ocimum*
 (3) *Salvia* (4) *Coriander*
58. What is obdiplostemonous condition ?
 (1) The inner whorl of stamens are opposite to the petals
 (2) The outer whorl of stamens are opposite to petals
 (3) Stamens are united
 (4) Stamens are free
59. When the filament is attached to the back of the anther at one point only resulting in the free motion of the anther. This type of anther is known as
 (1) Dorsifixed (2) Versatile
 (3) Adnate (4) Basifixed
60. Fasciculated stamens are found in
 (1) *Ricinus* (2) *Citrus*
 (3) *Mangifera* (4) *Ranunculus*

Choose the correct answers :

1. Which of the following book is not written by Linnaeus ?
 - (1) *Historia Naturalis*
 - (2) *Systema Naturae*
 - (3) *Species Plantarum*
 - (4) *Genera Plantarum*
2. The suffix used in class is
 - (1) -phyceae (2) -opsida
 - (3) -ae (4) All of these
3. The demerit listed in Bentham and Hooker classification is
 - (1) Orchidaceae have been considered as advance
 - (2) Gymnosperm were placed in between dicots and monocots
 - (3) System believes in fixity of species
 - (4) Monocots were considered advance
4. Which of the following represents autonyms ?
 - (1) *Acacia nilitica indica*
 - (2) *Corvus splendens splendens*
 - (3) *Malus malus*
 - (4) *Hibiscus rosa-sinensis*
5. Choose the correct statement regarding the system of classification
 - (1) Natural system is more practicable
 - (2) Phylogenetic system is less practicable
 - (3) In natural system, fossils play little role
 - (4) More than one are correct
6. *Species plantarum* includes description of
 - (1) 4326 plants (2) 5900 plants
 - (3) 340 plants (4) 18000 plants
7. The specimen selected from the new material to serve as nomenclatural type where original material is missing is known as
 - (1) Neotype (2) Lectotype
 - (3) Paratype (4) Syntype
8. The biological name of cauliflower is
 - (1) *Brassica oleracea* var. *capitata*
 - (2) *Brassica oleracea* var. *botrytis*
 - (3) *Brassica oleracea* var. *gemmifera*
 - (4) *Brassica oleracea* var. *gongylodes*
9. Out of the four widely known systems of classification one remains less phylogenetic and more natural. That is of
 - (1) Engler and Prantl
 - (2) Bentham and Hooker
 - (3) Rendle
 - (4) Hutchinson
10. Which taxonomic term may be substituted for any of the others?
 - (1) Order (2) Species
 - (3) Taxon (4) Class
11. A classification based on comparison of many morphological characters is called
 - (1) Natural system (2) Artificial system
 - (3) Biological system (4) Natural selection
12. Natural system of classification of plants differs from artificial system of classification in
 - (1) Taking into account only one vegetative character
 - (2) Taking into account only one floral character
 - (3) Taking into account all the similarities between plants
 - (4) All of these
13. The chief merit of Bentham & Hooker's classification is that
 - (1) It is a natural system of classification of all groups of plants
 - (2) The descriptions of the taxa are based on actual examination of the specimens
 - (3) It also considers the phylogenetic aspects
 - (4) It is a system mostly based on evolutionary concepts
14. John Ray was a/an
 - (1) English naturalist (2) German botanist
 - (3) Austrian biologist (4) American botanist
15. The phylogenetic system refers to
 - (1) The grouping according to evolutionary trends
 - (2) The grouping according to floral similarities
 - (3) The grouping according to morphological characters
 - (4) The grouping of plants in order of their increasing complexities
16. 'Genera Plantarum' which appeared in 3 volumes from 1862-1883 was written by
 - (1) Linnaeus (2) Bentham and Hooker
 - (3) Engler and Prantl (4) Aristotle
17. The "order" have the following suffix
 - (1) aceae (2) ales
 - (3) eae (4) inae

34. The fossil records prove that
- (1) Species have remained unchanged
 - (2) Present day species which are more complex have evolved from past simple species
 - (3) Past species were more complex and have evolved into present day simple form
 - (4) None of these
35. Who gave the biological concept of species ?
- (1) Huxley (2) Ernst Haeckel
 - (3) Mayr (4) Carolus Linnaeus
36. The famous book 'Origin of Species' was written by
- (1) Linnaeus (2) Francis Darwin
 - (3) Charles Darwin (4) Lamarck
37. A collection of population within which interbreeding occurs is called
- (1) Genus (2) Species
 - (3) Family (4) Phylum
38. Naming of cultivars is determined by
- (1) International Code of Nomenclature of Cultivated Plants
 - (2) International Code of Botanical Nomenclature
 - (3) International Association of Breeders and Genetists
 - (4) International Code of Nomenclature of Microbes
39. A scientist connected with the study of variations, evolution, and origin along with classification is known as
- (1) Classical taxonomist
 - (2) Herbal taxonomist
 - (3) Modern taxonomist
 - (4) New taxonomist
40. Phylogenetic system of classification was introduced by
- (1) Engler and Prantl (2) Bentham & Hooker
 - (3) Linnaeus (4) John Ray
41. The concept of binomial nomenclature was given by
- (1) Bentham (2) Linnaeus
 - (3) Hooker (4) Darwin
42. The correct sequence of taxonomic categories is
- (1) Division – class – family – tribe – order – genus – species
 - (2) Division – class – order – family – tribe – genus – species
 - (3) Phylum – order – class – tribe – family – genus – species
 - (4) Class – phylum – tribe – order – family – genus – species
43. Systematics is the study of
- (1) Diversity amongst groups of organisms
 - (2) Classification of flowering plants
 - (3) Classification of seeded plant
 - (4) Identifications and classifications
44. In an artificial system of classification
- (1) One or a few morphological characters are considered
 - (2) A few genetical characters are considered
 - (3) Only physiological characters are considered
 - (4) A large number of characters are considered
45. Related species which are reproductively isolated but morphologically similar are known as
- (1) Allopatric (2) Sibling
 - (3) Endemic (4) Sympatric
46. Species living in different geographical areas are
- (1) Sibling species (2) Morphospecies
 - (3) Sympatric species (4) Allopatric species
47. The specimen or element used by author as the nomenclatural type is
- (1) Neotype (2) Lectotype
 - (3) Holotype (4) Isotype
48. Binomial nomenclature means
- (1) One name given by two scientists
 - (2) One scientific name consisting of a generic and a specific epithet
 - (3) Two names, one latinised and the other of a person
 - (4) Two names, one scientific, other local.
49. Carolus Linnaeus wrote the book
- (1) Species Plantarum (2) Philosophica Botanica
 - (3) Systema Naturae (4) All of these
50. The basic unit of classifications is
- (1) Genus (2) Species
 - (3) Race (4) Variety
51. The species inhabiting a small geographical area are
- (1) Allopatric (2) Sympatric
 - (3) Sibling species (4) Endemic
52. In Bentham and Hooker's system, classification of flowering plants is on the basis of
- (1) Morphological characters
 - (2) Anatomical characters
 - (3) Embryological characters
 - (4) Evolution
53. "Taxonomy without phylogeny is similar to bones without flesh" is the statement of
- (1) Oswald Tippo (2) John Hutchinson
 - (3) Takhtajan (4) Bentham and Hooker

54. Oswald Tippo's classification is based on
 (1) Development of plants
 (2) Development of embryos
 (3) Presence of absence of vascular tissues
 (4) Both (2) and (3).
55. A system of classification in which large number of traits are considered is
 (1) Artificial system (2) Phylogenetic system
 (3) Natural system (4) Synthetic system
56. The book 'Genera Plantarum' was written by
 (1) Hutchinson (2) Bessey
 (3) Engler and Prantl (4) Bentham and Hooker
57. Two organisms with different correlated morphological characters belong to
 (1) One biological species
 (2) One taxonomic species
 (3) Two biological species
 (4) Two taxonomic species.
58. Isotype is a specimen which is
 (1) Duplicate of holotype
 (2) Described along with holotype
 (3) Nomenclatural type when the original is missing
 (4) Cited by author when there is no holotype.
59. *Die Naturelichen Pflanzenfamilien* was written by
 (1) Linnaeus (2) Hutchinson
 (3) Engler and Prantl (4) De Candolle
60. Classification reflecting the inter-relationships of organisms is called
 (1) Phylogenetic classification
 (2) Artificial classification
 (3) Natural classification
 (4) Numerical classification.
61. Revision means
 (1) Naming, classifying and understanding the evolutionary relationships of the species
 (2) Evolutionary relationships of the species
 (3) Taxonomic grouping of the species
 (4) None of these
62. Sometimes different authors give different names to one and the same species. In such a situation
 (1) The name under which the species was first described is valid
 (2) The name under which species was last described is valid
 (3) People are at liberty to use any one of the names for the species
 (4) All known names are described and a new name is given to species.
63. Typological concept of species was given by
 (1) Mendel (2) Aristotle and Plato
 (3) John Ray (4) Hutchinson
64. Phylogeny and inter-relationship found between taxa on the basis of number, type and arrangement of chromosomes is
 (1) Cytotaxonomy (2) Chromotaxonomy
 (3) Karyotaxonomy (4) Chemotaxonomy
65. Mule is a hybrid between
 (1) Male horse and female donkey
 (2) Female horse and male donkey
 (3) Both of these
 (4) None of these
66. According to Hutchinson the arborescent (woody) habit is
 (1) An advanced character
 (2) Primitive character
 (3) Evolutionary character
 (4) Not significant
67. Dendrogram is based on
 (1) Phenetic taxonomy
 (2) Adansonian taxonomy
 (3) Numerical taxonomy
 (4) All of these
68. The term taxon was introduced by
 (1) Meyer (2) Cuvier
 (3) Lamarck (4) Turril
69. A liger is a hybrid between
 (1) Male lion and female tiger
 (2) Female lion and male tiger
 (3) Both of these
 (4) None of these
70. Linnaeus wrote which one of the following books ?
 (1) Species Plantarum (2) Systema Naturae
 (3) Both of these (4) None of these
71. ICBN is connected with
 (1) Naming of plants
 (2) Naming of animals
 (3) Naming of viruses
 (4) Naming of all living organisms
72. Largest dicot and monocot family is
 (1) Poaceae and Malvaceae
 (2) Labiatae and Asteraceae
 (3) Asteraceae and Gramineae
 (4) Leguminosae and Liliaceae
73. $G(\bar{2})$ condition is found in
 (1) Asteraceae (2) Malvaceae
 (3) Poaceae (4) Liliaceae

74. Staple food grains for majority of the human population are obtained from
 (1) Malvaceae (2) Liliaceae
 (3) Graminae (4) Cucurbitaceae
75. Colchicine (alkaloid) used in cytology is obtained from corm of a plant belonging to the family
 (1) Cruciferae (2) Labiatae
 (3) Liliaceae (4) Solanaceae
76. Floral formula of Cruciferae/Brassicaceae is
 (1) $\oplus \overset{\curvearrowright}{\underset{\oplus}{\text{O}}} K_{2+2} C_4 A_{2+4} G_{(2)}$
 (2) $\oplus \overset{\curvearrowright}{\underset{\oplus}{\text{O}}} K_5 C_5 A_{5+5} G_1$
 (3) $\oplus \overset{\curvearrowright}{\underset{\oplus}{\text{O}}} P_{3+3} A_{3+3} G_{(3)}$
 (4) $\oplus \overset{\curvearrowright}{\underset{\oplus}{\text{O}}} K_5 \overset{\curvearrowright}{C_5} A_5 G_{(2)}$
77. A medicinal plant of Brassicaceae is
 (1) *Sisymbrium irio*
 (2) *Lepidium sativum*
 (3) *Cheiranthus cheiri*
 (4) All of these
78. Floral formula of Pea is
 (1) $\oplus \overset{\curvearrowright}{\underset{\oplus}{\text{O}}} K_{2+2} C_4 A_{2+4} G_{(2)}$
 (2) $\oplus \overset{\curvearrowright}{\underset{\oplus}{\text{O}}} K_{(5)} C_{1+2+(2)} A_{1+(9)} G_1$
 (3) $\oplus \overset{\curvearrowright}{\underset{\oplus}{\text{O}}} P_{3+3} A_{3+3} G_{(3)}$
 (4) $\oplus \overset{\curvearrowright}{\underset{\oplus}{\text{O}}} K_5 C_{1+2+(2)} A_{1+(9)} G_{(2)}$
79. Red Sandal Wood is
 (1) *Santalum album*
 (2) *Pterocarpus santalinus*
 (3) *Pterocarpus marsupium*
 (4) *Butea monosperma*
80. Jeweller's weights are obtained from
 (1) *Sesbania grandiflora*
 (2) *Abrus precatorius*
 (3) *Psoralea corylifolia*
 (4) *Cyamopsis tetragonaloba*
81. Two important papilionaceous timber woods are
 (1) *Dalbergia sisso* and *Albizia lebbek*
 (2) *Butea monosperma* and *Xylocarpus xylocarpa*
 (3) *Dalbergia sisso* and *Intisia hookeri*
 (4) *Dalbergia sisso* and *Pterocarpus marsupium*
82. Siliqua fruit is characteristic of family
 (1) Poaceae (2) Fabaceae
 (3) Brassicaceae (4) Asteraceae
83. Calyx is converted into hairy pappus in
 (1) *Brassica* (2) *Cichorium*
 (3) *Ageratum* (4) *Sonchus*
84. Antimalarial drug is obtained from
 (1) *Solidago*
 (2) *Artemisia annua*
 (3) *Eclipta prostrata*
 (4) *Centipeda obcularis*
85. Drug Santonin (anthelmintic) comes from
 (1) *Centipeda* (2) *Artemisia*
 (3) *Tagetes* (4) *Chrysanthemum*
86. Disc florets of sunflower are
 (1) Zygomorphic epigynous
 (2) Zygomorphic hypogynous
 (3) Actinomorphic epigynous
 (4) Actinomorphic hypogynous
87. Mustard oil or Colza is got from
 (1) *Brassica oleraceae*
 (2) *Brassica rapa*
 (3) *Brassica juncea*
 (4) *Brassica campesteris*
88. A weed belonging to family Asteraceae which has spread in all parts of India is
 (1) *Nicotiana* (2) *Oryza*
 (3) *Parthenium* (4) *Hordeum*
89. Plant yielding medicine for checking eye is
 (1) *Withania coagulens*
 (2) *Atropa belladonna*
 (3) *Hyoscyamus niger*
 (4) *Solanum surattense*
90. Red dye for dyeing silk is got from petals of
 (1) *Tagetes erecta*
 (2) *Zinnia elegans*
 (3) *Carthamus tinctorius*
 (4) *Eclipta prostrata*
91. Belladonna is obtained from
 (1) *Atropa* (2) *Hyoscyamus*
 (3) *Calendula* (4) *Aconitum*
92. Name the family having (9) + 1 arrangement of stamens
 (1) Solanaceae (2) Asteraceae
 (3) Liliaceae (4) Fabaceae

93. Plants which are used as green manure in crop fields and in sandy soil
 (1) *Crotalaria juncea* and *Alhagi camelorum*
 (2) *Calotropis procera* and *Phyllanthus niruri*
 (3) *Saccharum munja* and *Lantana camara*
 (4) *Dichanthium annulatum* and *Azolla nilotica*
94. Which of the following is correct with reference to flowers of family solanaceae
 (1) Pentmerous, actinomorphic, unisexual, hypogynous
 (2) Pentamerous, zygomorphic, bisexual, epigynous
 (3) Pentamerous, bisexual, actinomorphic, hypogynous
 (4) Trimerous, actinomorphic, bisexual, hypogynous
95. Ovary having basal placentation is
 (1) Monocarpellary bilocular
 (2) Bicarpellary, syncarpous and unilocular
 (3) Multicarpellary, syncarpous and unilocular
 (4) Syncarpous with two or more carpels
96. Indefinite stamens are characteristic of family
 (1) Malvaceae (2) Gramineae
 (3) Cruciferae (4) Labiatae
97. Find out the wrong character of compositae
 (1) Head inflorescence
 (2) Hypogynous flowers
 (3) Syngeneous androecium
 (4) Fruit is a cypsel
98. Synandrous condition is common in the family
 (1) Umbelliferae (2) Rosaceae
 (3) Malvaceae (4) Cucurbitaceae
99. The carpels of *Solanum* flower are oblique because
 (1) The posterior and the anterior carpels move to the left
 (2) The posterior carpel turns to the left and anterior to right
 (3) The posterior and anterior carpels turn by 180°
 (4) The posterior carpels turn to the right and the anterior to the left
100. The flowers of Ranunculaceae are characterized by
 (1) Cyclic arrangement of floral whorls on a long thalamus
 (2) Cyclic arrangement of floral whorls on a long thalamus
 (3) Spiral arrangement of stamens and carpels on a short thalamus
 (4) Spiral arrangement of stamens and carpels on an elongated thalamus
101. In *Hibiscus* flower the androecium is
 (1) Monadelphous and ditheous
 (2) Diadelphous and ditheous
 (3) Polyandrous and monotheous
 (4) Monadelphous and monotheous
102. $\oplus P_{3+3} A_{3+3} \underline{G}_3$ is the floral formula of
 (1) Malvaceae (2) Liliaceae
 (3) Solanaceae (4) Labiatae
103. Siliqua is a characteristic feature of
 (1) Malvaceae (2) Liliaceae
 (3) Cruciferae (4) Leguminosae
104. Mark the correct statement for gramineae
 (1) Awn is an appendage of palea
 (2) Palea is a bracteole
 (3) The carpel has two styles
 (4) Spikelets are always in pairs
105. In ovary only one ovule is present in
 (1) Compositae (2) Labiatae
 (3) Solanaceae (4) None of these
106. Which is the main distinguishing feature of solanaceae from compositae ?
 (1) Bicarpellary gynoecium
 (2) Gamopetalous corolla
 (3) Cymose inflorescence
 (4) Epipetalous stamens
107. A monocot flower can be differentiated from a dicot flower as
 (1) Monocot flowers are very large as compared to dicot flowers
 (2) Monocot flowers are very small as compared to dicot flowers
 (3) Monocot flowers have perianth
 (4) None of these
108. Gynobasic style is characteristic of
 (1) Labiatae (2) Solanaceae
 (3) Gramineae (4) Liliaceae
109. Ovary is obliquely placed in
 (1) Ranunculaceae (2) Brassicaceae
 (3) Asteraceae (4) Solanaceae
110. The floral formula $\oplus \overset{\uparrow}{\underset{+}{\bigcirc}} K_{(5)} C_{(5)} A_5 \underline{G}_{(2)}$ belongs to
 (1) Solanaceae (2) Liliaceae
 (3) Cruciferae (4) Asteraceae
111. Which is the floral formula of tobacco?
 (1) $\oplus \overset{\uparrow}{\underset{+}{\bigcirc}} P_2 A_3 \underline{G}_1$
 (2) $\oplus \overset{\uparrow}{\underset{+}{\bigcirc}} K_{4-5} C_{4-5} A_{10} \underline{G}_1$
 (3) $\oplus \overset{\uparrow}{\underset{+}{\bigcirc}} K_{2+2} C_4 A_{2+4} \underline{G}_{(2)}$
 (4) $\oplus \overset{\uparrow}{\underset{+}{\bigcirc}} K_{(5)} \overset{\frown}{C_{(5)}} A_{(5)} \underline{G}_{(2)}$
112. In brassicaceae the androecium is
 (1) Monadelphous and Ditheous
 (2) Tetradynamous and Ditheous
 (3) Polyandrous and Monotheous
 (4) Monadelphous and Monotheous

113. Monothealous anther is a characteristic feature of the family
(1) Liliaceae (2) Ranunculaceae
(3) Malvaceae (4) Gramineae
114. 5 + 5 condition of the androecium is found in one of the families
(1) Malvaceae (2) Rutaceae
(3) Papilionaceae (4) Caesalpinaceae
115. Which is the main distinguishing feature of malvaceae from compositae ?
(1) Pentacarpellary gynoecium
(2) Gamopetalous corolla
(3) Cymose inflorescence
(4) Epipetalous stamens
116. Silicula fruit is a characteristic feature of
(1) Mustard (2) Radish
(3) Candytuft (4) Beet root
117. Didynamous androecium is a characteristic feature of
(1) Brassicaceae (2) Labiatae
(3) Solanaceae (4) Asteraceae
118. Epipetalous stamens with free filaments but fused anthers are found in
(1) Asteraceae (2) Convolvulaceae
(3) Solanaceae (4) Asclepiadaceae
119. Syngenesious stamens and pappus are found in
(1) Malvaceae (2) Compositae
(3) Solanaceae (4) Papilionaceae
120. Synandrous stamens is found in
(1) Malvaceae (2) Cucurbitaceae
(3) Solanaceae (4) Papilionaceae

Assertion-Reason Type Questions (For AIIMS)

Each of the questions given below consists of two statements, an assertion (A) and reason (R). Select the number corresponding to the appropriate alternative as follows

- (1) If both A and R are true and R is the correct explanation of A, then mark 1
- (2) If both A and R are true but R is not the correct explanation of A, then mark 2
- (3) If A is true but R is false, then mark 3
- (4) If both A and R are false, then mark 4

1. A. Phenetics is also called numerical taxonomy.
R. Phenetics takes into account maximum number of similarities and differences between the species.
2. A. Cladistics is also known as new systematics or biosystematics.
R. Cladistics is a natural system of classification.
3. A. Orchidaceae is the most primitive family.
R. Orchidaceae belongs to dicots.
4. A. Natural systems of classification takes into account most of the significant morphological characters.
R. Natural system of classification is based on phylogeny.
5. A. Ranunculaceae is the most primitive family.
R. The stamens and carpels of Ranunculaceae are indefinite and are arranged in a spiral manner.
6. A. Polypetalous condition is a primitive feature.
R. Thalamifloreae is the most primitive group in dicots.
7. A. Monocots are more advanced than dicots.
R. Herbaceous plants are more advanced than trees.
8. A. Epigynous ovary is always inferior.
R. Inferior ovary is an advance character.
9. A. All the modern systems of classification are artificial.
R. Hutchinson proposed a phylogenetic system of classification.
10. A. In numerical taxonomy as many characters as possible are employed for evaluating degree of similarities and differences.
R. Numerical taxonomy is based on phylogenetic relationship.

11. A. Artificial system of classification is based on one or few superficial characters.
R. The criteria used are arbitrary and do not reflect natural relationships.
12. A. Similarities among organisms also exists at molecular level. This is called molecular homology.
R. Phylogeny of related organisms can be determined by comparing the base sequences in the nucleic acids.
13. A. Chemotaxonomy is widely used for determining relationships among plants.
R. Betacyanin, a water soluble red pigment, found in beet root can be safely placed in the same group.
14. A. A category is an abstract term that simply represents a rank or level in classification.
R. *Rosa indica* is a taxon and species is its category.
15. A. Conservative characters are less significant in classification.
R. Conservative characters change during evolution.
16. A. Systematics is the branch of biology that deals with classification of living organism.
R. The aim of classification is to group the organisms in an orderly manner.
17. A. Natural system of classification involves homology.
R. It is based on several morphological characters.
18. A. Study of internal structure is called anatomy.
R. It is useful for phylogenetic study.
19. A. Artificial system is not related with phylogeny.
R. Artificial system is based on only one character.
20. A. Annuals and biennials are monocarpic.
R. Annuals and biennials flower only once in their life.
21. A. In *Passiflora* the tendrils are a modification of stem.
R. The tendril is axillary in position.

22. **A.** The phylloclade is a modified stem into a leafy structure.
R. Cladode is meant for preventing transpiration.
23. **A.** *Smilax* shows reticulated venation.
R. *Smilax* is a dicot plant.
24. **A.** The dicot trees generally have cymose branching.
R. The dicot trees show growth by apical bud.
25. **A.** Coconut trees are seen throughout the world in coastal areas.
R. Coconut fruit is dispersed by water.
26. **A.** The cypsela fruit shows parachute mechanism for their dispersal.
R. The cypsela fruit has persistent hairy calyx.
27. **A.** Epigynous condition is an advanced feature in dicots.
R. Compositae flowers are epigynous.
28. **A.** In potato, tomato and brinjal the placentae are swollen.
R. Potato, tomato and brinjal belong to the family *Solanaceae*.
29. **A.** Ovary is the basal swollen portion of the carpel.
R. Ovary matures into a fruit.
30. **A.** Spike is a racemose type of inflorescence.
R. Flowers arise in basipetal succession on main axis.
31. **A.** Thorns in some plants may bear nodes and internodes.
R. Thorns are modified stems.
32. **A.** For dispersal by wind, fruits and seeds should be light.
R. Buoyancy helps fruits and seeds to fly upto a long distance.
33. **A.** Dispersal of fruit in *Xanthium* takes place by wind and water
R. Fruits are light and floating.
34. **A.** The leaflet of a compound leaf is not a true leaf.
R. There is no bud in the axil of leaflet.
35. **A.** Roots and shoot system differs markedly.
R. Only flowers are reproductive organs.
36. **A.** The biennial plants live for two years.
R. Biennials flower twice in a year.
37. **A.** Groundnut is a geocarpic fruit.
R. In groundnut pollination is subterranean.
38. **A.** Synandrous condition is found in cucurbits.
R. The male flower of cucurbits, generally, contains five stamens which are laterally fused (anthers and filaments both).
39. **A.** Leaves of *Smilax* show parallel venation.
R. Leaves of all the plants belonging to family Liliaceae show parallel venation.
40. **A.** Ovary of family Brassicaceae is unilocular in the beginning but becomes bilocular at a later stage.
R. Ovary of Brassicaceae becomes bilocular due to formation of true septum.
41. **A.** The flowers of the family Liliaceae are pentamerous.
R. Flower of Liliaceae are pentamerous because it is a dicot family.
42. **A.** The stamen in the family cucurbitaceae is syngenesious.
R. The filaments as well as anthers are free in this condition.
43. **A.** The placentae is swollen in the ovary of solanaceae.
R. The ovary is obliquely placed on the thalamus in solanaceae.
44. **A.** The name of the family compositae has been changed to Brassicaceae.
R. According to ICBN the suffix of a family should be – aceae.
45. **A.** Position of mother axis is most important in the floral diagram.
R. It indicates the number of stamens in a flower.

ANSWERS TO ASSIGNMENT

VEGETATIVE MORPHOLOGY

1	(1)	2	(3)	3	(1)	4	(3)	5	(1)
6	(3)	7	(1)	8	(3)	9	(4)	10	(1)
11	(3)	12	(1)	13	(1)	14	(2)	15	(4)
16	(3)	17	(2)	18	(3)	19	(1)	20	(2)
21	(2)	22	(2)	23	(3)	24	(1)	25	(1)
26	(1)	27	(2)	28	(2)	29	(1)	30	(3)
31	(3)	32	(2)	33	(3)	34	(4)	35	(2)
36	(1)	37	(1)	38	(1)	39	(1)	40	(4)
41	(1)	42	(4)	43	(2)	44	(2)	45	(3)
46	(1)	47	(2)	48	(2)	49	(2)	50	(1)
51	(1)	52	(2)	53	(2)	54	(3)	55	(2)
56	(2)	57	(1)	58	(1)	59	(1)	60	(1)
61.	(2)								

REPRODUCTIVE MORPHOLOGY

1	(2)	2	(2)	3	(1)	4	(2)	5	(1)
6	(4)	7	(2)	8	(1)	9	(1)	10	(4)
11	(1)	12	(4)	13	(3)	14	(3)	15	(1)
16	(4)	17	(2)	18	(3)	19	(1)	20	(2)
21	(3)	22	(2)	23	(2)	24	(3)	25	(4)
26	(4)	27	(3)	28	(2)	29	(1)	30	(3)
31	(3)	32	(3)	33	(4)	34	(3)	35	(2)
36	(3)	37	(1)	38	(2)	39	(3)	40	(2)
41	(3)	42	(2)	43	(3)	44	(1)	45	(4)
46	(4)	47	(2)	48	(4)	49	(4)	50	(3)
51	(4)	52	(3)	53	(3)	54	(3)	55	(3)
56	(2)	57	(1)	58	(2)	59	(2)	60	(1)

SYSTEMATICS & FAMILIES OF FLOWERING PLANTS

1	(1)	2	(3)	3	(3)	4	(2)	5	(1)
6	(2)	7	(1)	8	(2)	9	(2)	10	(3)
11	(1)	12	(3)	13	(2)	14	(1)	15	(1)
16	(2)	17	(2)	18	(4)	19	(2)	20	(4)
21	(1)	22	(2)	23	(1)	24	(3)	25	(4)

26	(4)	27	(4)	28	(4)	29	(2)	30	(1)
31	(1)	32	(3)	33	(4)	34	(2)	35	(3)
36	(3)	37	(2)	38	(1)	39	(1)	40	(1)
41	(2)	42	(2)	43	(1)	44	(1)	45	(2)
46	(4)	47	(3)	48	(2)	49	(4)	50	(2)
51	(4)	52	(1)	53	(3)	54	(4)	55	(3)
56	(4)	57	(4)	58	(1)	59	(3)	60	(1)
61	(1)	62	(1)	63	(2)	64	(3)	65	(2)
66	(2)	67	(4)	68	(1)	69	(1)	70	(3)
71	(1)	72	(3)	73	(1)	74	(3)	75	(3)
76	(1)	77	(4)	78	(2)	79	(3)	80	(2)
81	(4)	82	(3)	83	(4)	84	(2)	85	(2)
86	(3)	87	(4)	88	(3)	89	(2)	90	(3)
91	(1)	92	(4)	93	(1)	94	(3)	95	(2)
96	(1)	97	(2)	98	(4)	99	(4)	100	(4)
101	(4)	102	(2)	103	(3)	104	(1)	105	(1)
106	(1)	107	(3)	108	(1)	109	(4)	110	(1)
111	(4)	112	(2)	113	(3)	114	(4)	115	(1)
116	(3)	117	(2)	118	(1)	119	(2)	120	(2)

ASSERTION-REASON TYPE QUESTIONS (FOR AIIMS)

1	(1)	2	(3)	3	(4)	4	(3)	5	(1)
6	(3)	7	(1)	8	(2)	9	(4)	10	(3)
11	(2)	12	(1)	13	(3)	14	(3)	15	(4)
16	(2)	17	(1)	18	(2)	19	(1)	20	(1)
21	(1)	22	(2)	23	(3)	24	(3)	25	(1)
26	(1)	27	(1)	28	(1)	29	(1)	30	(3)
31	(1)	32	(1)	33	(4)	34	(1)	35	(2)
36	(4)	37	(1)	38	(1)	39	(4)	40	(1)
41	(4)	42	(4)	43	(2)	44	(4)	45	(3)

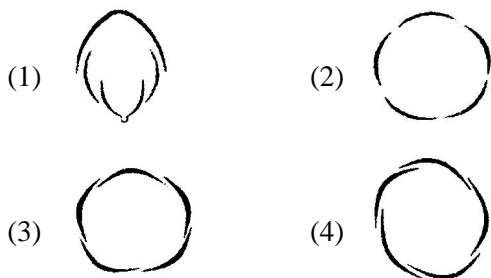
CBSE - PMT

1. Phylogenetic system of classification is based on
 - (1) Floral characters
 - (2) Evolutionary relationships
 - (3) Morphological features
 - (4) Chemical constituents
2. Cotyledons and testa respectively are edible parts in
 - (1) cashew nut and litchi
 - (2) groundnut and pomegranate
 - (3) walnut and tamarind
 - (4) french bean and coconut
3. An example of a seed with endosperm, perisperm, and caruncle is
 - (1) castor
 - (2) cotton
 - (3) coffee
 - (4) lily
4. A fruit developed from hypanthodium inflorescence is called
 - (1) Caryopsis
 - (2) Hesperidium
 - (3) Sorosis
 - (4) Syconus
5. The floral formula $\oplus \overline{\text{K}}_{(5)} \overline{\text{C}}_{(5)} \overline{\text{A}}_5 \underline{\text{G}}_{(2)}$ is that of
 - (1) Tobacco
 - (2) Tulip
 - (3) Soybean
 - (4) Sunnhemp
6. An example of axile placentation is
 - (1) Marigold
 - (2) *Argemone*
 - (3) *Dianthus*
 - (4) Lemon
7. Vegetative propagation in mint occurs by
 - (1) Sucker
 - (2) Runner
 - (3) Offset
 - (4) Rhizome
8. Dry indehiscent single-seeded fruit formed from bicarpellary syncarpous inferior ovary is
 - (1) Caryopsis
 - (2) Cypsela
 - (3) Berry
 - (4) Cremocarp
9. The fleshy receptacle of syconus of fig encloses a number of
 - (1) Achenes
 - (2) Samaras
 - (3) Berries
 - (4) Mericarps
10. Replum is present in the ovary of flower of
 - (1) Lemon
 - (2) Mustard
 - (3) Sun flower
 - (4) Pea
11. Thorn of *Bougainvillea* and tendril of *cucurbita* are examples of
 - (1) Analogous organs
 - (2) Homologous organs
 - (3) Vestigial organs
 - (4) Retrogressive evolution
12. The fruit is chambered, developed from inferior ovary and has seeds with succulent testa in
 - (1) Pomegranate
 - (2) Orange
 - (3) Guava
 - (4) Cucumber
13. ICBN stands for :
 - (1) International Code of Botanical Nomenclature
 - (2) International Congress of Biological Names
 - (3) Indian Code of Botanical Nomenclature
 - (4) Indian Congress of Biological Names
14. Pineapple (annanas) fruit develops from
 - (1) a cluster of compactly borne flowers on a common axis
 - (2) a multilocular monocarpellary flower
 - (3) a unilocular polycarpellary flower
 - (4) a multipistillate syncarpous flower
15. In which of the following fruits is the edible part the aril ?
 - (1) Orange
 - (2) Litchi
 - (3) Custard apple
 - (4) Pomegranate
16. Long filamentous threads protruding at the end of a young cob of maize are
 - (1) ovaries
 - (2) hairs
 - (3) anthers
 - (4) styles
17. What type of placentation is seen in sweet pea?
 - (1) Free central
 - (2) Marginal
 - (3) Basal
 - (4) Axile
18. In a cereal grain the single cotyledon of embryo is represented by
 - (1) Prophyll
 - (2) Coleoptile
 - (3) Coleorhiza
 - (4) Scutellum
19. Pentamerous actinomorphic flowers, bicarpellary ovary with oblique septa, and fruit a capsule or berry, are characteristic features of
 - (1) Solanaceae
 - (2) Liliaceae
 - (3) Asteraceae
 - (4) Brassicaceae
20. Which of the following represents the edible part of the fruit of Litchi ?
 - (1) Endocarp
 - (2) Pericarp
 - (3) Juicy aril
 - (4) Mesocarp
21. Edible part of mango is
 - (1) Mesocarp
 - (2) Endocarp
 - (3) Receptacle
 - (4) Epicarp
22. Phenetic classification of organisms is based on
 - (1) Sexual characteristics
 - (2) Observable characteristics of existing organisms
 - (3) The ancestral lineage of existing organisms
 - (4) Dendogram based on DNA characteristics

23. The technical term used for the androecium in a flower of China rose (*Hibiscus rosasinensis*) is
- (1) Polyadelphous (2) Monadelphous
(3) Diadelphous (4) Polyandrous
24. Ovary is half-inferior in the flowers of
- (1) Cucumber (2) Guava
(3) Plum (4) Brinjal
25. Keel is characteristic of the flowers of
- (1) Bean (2) Gulmohur
(3) *Cassia* (4) *Calotropis*
26. Wind pollinated flowers are:
- (1) small, producing nectar and dry pollen
(2) small, brightly coloured, producing large number of pollen grains
(3) small, producing large number of dry pollen grains
(4) large producing abundant nectar and pollen
27. Transfer of pollen grains from the anther to the stigma of another flower of the same plant is called:
- (1) Autogamy (2) Xenogamy
(3) Geitonogamy (4) Karyogamy
28. The "Eyes" of the potato tuber are
- (1) Root buds (2) Flower buds
(3) Shoot buds (4) Axillary buds
29. Which one of the following statements is **correct** ?
- (1) In tomato, fruit is a capsule
(2) Seeds of orchids have oil - rich endosperm
(3) Placentation in *primose* is basal
(4) Flower of tulip is a modified shoot
30. Large Woody Vines are more commonly found in
- (1) Temperate forests (2) Mangroves
(3) Tropical rainforests (4) Alpine forests
31. The **correct** floral formula of chilli is
- (1) $\oplus \overset{\sigma}{K}_{(5)} C_{(5)} A_5 G_{(2)}$
(2) $\oplus \overset{\sigma}{K}_{(5)} \overset{\curvearrowright}{C}_{(5)} A_{(5)} G_{(2)}$
(3) $\oplus \overset{\sigma}{K}_{(5)} C_{(5)} A_{(5)} G_2$
(4) $\oplus \overset{\sigma}{K}_5 \overset{\curvearrowright}{C}_5 A_{(5)} G_2$
32. Flowers are Zygomorphic in
- (1) Mustard (2) Gulmohur
(3) Tomato (4) Datura
33. The ovary is half inferior in flowers of
- (1) Peach (2) Cucumber
(3) Cotton (4) Guava
34. Wind pollination is common in
- (1) Legumes (2) Lilies
(3) Grasses (4) Orchids
35. A drupe develops in
- (1) Mango (2) Wheat
(3) Pea (4) Tomato
36. How many plants in the list given below have composite fruits that develop from an inflorescence ? Walnut, poppy, radish, fig, pineapple, apple, tomato, mulberry.
- (1) Three (2) Four
(3) Five (4) Two
37. The gynoecium consists of many free pistils in flowers of
- (1) *Michelia* (2) *Aloe*
(3) Tomato (4) *Papaver*
38. Phyllode is present in
- (1) *Opuntia* (2) *Asparagus*
(3) *Euphorbia* (4) Australian Acacia
39. Vexillary aestivation is characteristic of the family
- (1) Brassicaceae (2) Fabaceae
(3) Asteraceae (4) Solanaceae
40. Even in absence of pollinating agents seed-setting is assured in
- (1) Fig (2) *Commellina*
(3) *Zostera* (4) *Salvia*
41. Cymose inflorescence is present in
- (1) *Brassica* (2) *Solanum*
(3) *Sesbania* (4) *Trifolium*
42. Which one of the following is correctly matched ?
- (1) Yeast – Zoospores
(2) Onion – Bulb
(3) Ginger – Sucker
(4) *Chlamydomonas* – Conidia
43. Placentation in tomato and lemon is
- (1) Axile (2) Parietal
(3) Free central (4) Marginal

CBSE - PMT MAINS

1. Aestivation of petals in the flower of cotton is correctly shown in



2. The correct floral formula of soybean is

- (1) $\% \overset{\sigma}{\oplus} K_{(5)} C_{1+(2)+2} A_{(9)+1} G_{\perp}$
 (2) $\% \overset{\sigma}{\oplus} K_{(5)} C_{1+(2)+2} A_{(9)+1} G_{\perp}$
 (3) $\% \overset{\sigma}{\oplus} K_{(5)} C_{1+2+(2)} A_{(9)+1} G_{\perp}$
 (4) $\% \overset{\sigma}{\oplus} K_{(5)} C_{1+2+(2)} A_{1+(9)} G_{\perp}$

3. Consider the following four statements A, B, C and D and select the right option for two **correct** statements.

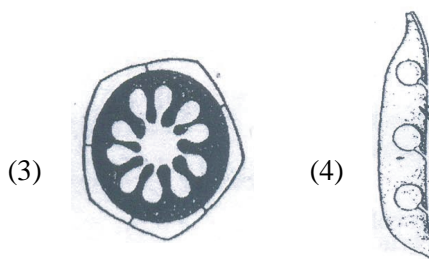
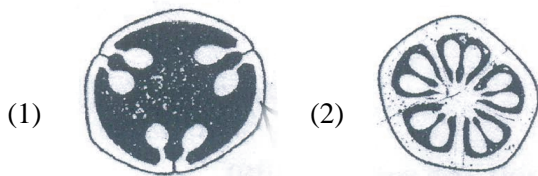
Statements :

- (A) In vexillary aestivation, the large posterior petal is called - *standard*, two lateral ones are *wings* and two small anterior petals are termed *keel*
 (B) The floral formula for Liliaceae is
 $\oplus \overset{\sigma}{\oplus} P_{3+3} A_{3+3} G_{\underline{3}}$
 (C) In pea flower the stamens are monadelphous
 (D) The floral formula for Solanaceae is

$$\oplus \overset{\sigma}{\oplus} K_{(3)} C_{(3)} A_{(4)} G_{\underline{2}}$$

The correct statements are :

- (1) (A) and (C) (2) (A) and (B)
 (3) (B) and (C) (4) (C) and (D)
4. Which one of the following diagrams represents the placentation in *Dianthus* ?



5. Sweet potato is homologous to
 (1) Turnip (2) Potato
 (3) Colocasia (4) Ginger
6. Whorled, simple leaves with reticulate venation are present in
 (1) *Alstonia* (2) *Calotropis*
 (3) Neem (4) China Rose
7. Which one of the following pairs is **wrongly** matched while the remaining three are correct ?
 (1) *Agave* – Bulbils
 (2) *Penicillium* – Conidia
 (3) Water hyacinth – Runner
 (4) *Bryophyllum* – Leaf buds
8. How many plants in the list given below have marginal placentation ?
 Mustard, Gram, Tulip, Asparagus, Arhar, Sun hemp, Chilli, Colchicine, Onion, Moong, Pea, Tobacco, Lupin
 (1) Three (2) Four
 (3) Five (4) Six
9. *Cuscuta* is an example of
 (1) Endoparasitism (2) Ecotoparasitism
 (3) Brood parasitism (4) Predation
10. Which one of the following organisms is correctly matched with its three characteristics ?
 (1) Maize : C_3 pathway, Closed vascular bundles, Scutellum
 (2) Pea : C_3 pathway, Endospermic seed, Vexillary aestivation
 (3) Tomato : Twisted aestivation, Axile placentation, Berry
 (4) Onion : Bulb, Imbricate aestivation, Axile placentation

NEET

- When the margins of sepals or petals overlap one another without any particular direction, the condition is termed as
 - Twisted
 - Valvate
 - Vexillary
 - Imbricate
- An example of edible underground stem is
 - Sweet potato
 - Potato
 - Carrot
 - Groundnut
- An aggregate fruit is one which develops from
 - Complete inflorescence
 - Multicarpellary superior ovary
 - Multicarpellary syncarpous gynoecium
 - Multicarpellary apocarpous gynoecium

DPMT

- A fibrous root system is excellent for :
 - Food storage
 - Nitrogen fixation
 - Absorbing water from deeper layer of soil
 - Providing good anchorage for the plant
- If a primary root continues to grow, the type of root system will be known as:
 - Secondary
 - Fibrous
 - Tap
 - stilt
- A horizontal underground stem is a
 - Corm
 - Phylloclade
 - Rhizome
 - Rhizoid
- Sunflower belongs to the family :
 - Liliaceae
 - Asteraceae
 - Cruciferae
 - Fabaceae
- Phylogenetic system of classification was given by
 - Engler
 - Linnaeus
 - John Ray
 - Banham and Hooker
- Thorn of *Bougainvillea* and Tendril of cucurbits
 - Analogous organs
 - Homologous organs
 - Modified stipules
 - Modified floral bud
- Viscum album* grows on trees. This is an example of
 - Saprophytism
 - Epiphytism
 - Parasitism
 - Symbiosis
- National Botanical Research Institute is located at
 - Lucknow
 - Nagpur

- Combatore
 - Dehradun
- Hesperidium of orange is a modification of
 - Drupe
 - Berry
 - Pepo
 - Pome
 - In drumstick the seeds are dispersed by
 - Hairs
 - Wind
 - Explosive mechanism
 - Censer mechanism
 - Taxon
 - The smallest unit in taxonomy
 - A sub-species
 - A term used by Linnaeus for a species
 - Any rank in taxonomic hierarchy
 - Phylogenetic system is based on
 - Similarities and differences between organisms
 - Characters which are conservative
 - Genetical similarities
 - Evolutionary and genetic characters
 - This being a higher taxonomic category than taxon
 - This being lower taxonomic category than taxon
 - This being the plural of taxon
 - This being the singular of taxon
 - The type of pollination involving transfer of pollen grains from anther to the stigma of the same flower is known as
 - Geitonogamy
 - Xenogamy
 - Autogamy
 - Apogamy
 - The egg apparatus of angiosperm comprises
 - An egg cell and two antipodals
 - An egg cell and two synergids
 - An egg cell and two polar nuclei
 - An egg cell and the central cell
 - The expression “gynoecium is apocarpous” implies that the
 - Gynoecium comprises only one pistil which is fused with the stamen
 - Gynoecium comprises more than one carpel, all of which are free
 - Gynoecium comprises only one carpel which is free
 - Gynoecium comprises more than one carpel which are fused
 - The total number of species, that are known and described, range between
 - 0.5 – 1.0 million
 - 1.1 – 1.2 million

- (3) 1.7 – 1.8 million (4) 2.5 – 3.0 million
18. Which of the following combinations is *correct* for wheat ?]
- (1) Genus : *Triticum*, Family : Anacardiaceae, Order : Poales, Class : Monocotyledonae
 (2) Genus : *Triticum*, Family : Poaceae, Order : Poales, Class : Dicotyledonae
 (3) Genus : *Triticum*, Family : Poaceae, Order : Sapindales, Class : Monocotyledonae
 (4) Genus : *Triticum*, Family : Poaceae, Order : Poales, Class : Monocotyledonae
19. A group of related genera, with still less number of similarities as compared to the genus and species, constitutes
- (1) Order (2) Class
 (3) Family (4) Division
20. In primary succession on rocks, the pioneer species are usually
- (1) Algae (2) Fungi
 (3) Lichens (4) Bryophytes
21. Classification of organisms based on evolutionary as well as genetic relationships is called
- (1) Biosystematics
 (2) Phenetics
 (3) Numerical taxonomy
 (4) Cladistics
22. A plant species which has been exploited for the production of Hirudin is
- (1) *Brassica napus* (2) *Zea mays*
 (3) *Solanum nigrum* (4) *Oryza sativa*
23. Long, ribbon-like pollen grains are seen in some
- (1) Aquatic plants
 (2) Wind-pollinated grasses
 (3) Gymnosperms
 (4) Bird-pollinated flowers
24. Tendrils in plants are an example of
- (1) Convergent evolution
 (2) Adaptive radiation
 (3) Divergent evolution
 (4) Co-evaluation
25. Taxonomic hierarchy refers to
- (1) Step-wise arrangement of all categories for classification of plants and animals
 (2) A group of senior taxonomists who decide the nomenclature of plants and animals
 (3) A list of botanists or zoologists who have worked on taxonomy of a species or group
 (4) Classification of a species based on fossil record
26. Scutellum in a caryopsis represents

- (1) Outermost layer of endosperm
 (2) A sheath that protects the radicle
 (3) The place where the seed is attached to raphe
 (4) A cotyledon
27. Total number of all species of organisms in a given region is known as the region's
- (1) Biota (2) Flora
 (3) Fauna (4) Diversity

AIIMS

1. The family containing mustard, and its main characters are
- (1) Brassicaceae – Tetramerous flowers, six stamens, bicarpellary gynoecium, siliqua type fruit
 (2) Brassicaceae – Pentamerous flowers, many stamens, pentacarpellary gynoecium capsule type fruit
 (3) Solanaceae – Pentamerous flowers, five stamens, bicarpellary gynoecium, berry type fruit
 (4) Poaceae – Trimerous flowers, three stamens, monocarpellary gynoecium, caryopsis type of fruit

Biology Olympiad

1. The gynoecium in Brassicaceae is
- (1) Monocarpellary, superior ovary, placentation marginal
 (2) Bicarpellary, syncarpous, unilocular, superior ovary, parietal placentation
 (3) Bicarpellary, syncarpous, inferior ovary, basal placentation
 (4) Bicarpellary, syncarpous, superior ovary placed obliquely, placentation axrile
2. The drawback of Bentham and Hooker is
- (1) Placement of the order Ranales at the beginning of classification
 (2) Placement of family Asteraceae in the beginning of gamopetalae
 (3) Both (1) and (2)
 (4) None of these

ANSWERS :

QUESTIONS FROM COMPETITIVE EXAMS

CBSE - PMT

1. (2)	2. (2)	3. (1)	4. (4)	5. (1)
6. (4)	7. (1)	8. (2)	9. (1)	10. (2)
11. (2)	12. (1)	13. (1)	14. (1)	15. (2)
16. (4)	17. (2)	18. (4)	19. (1)	20. (3)
21. (1)	22. (2)	23. (2)	24. (3)	25. (1)
26. (3)	27. (3)	28. (4)	29. (4)	30. (3)
31. (2)	32. (2)	33. (1)	34. (3)	35. (1)
36. (1)	37. (1)	38. (4)	39. (2)	40. (2)
41. (2)	42. (2)	43. (1)		

CBSE - PMT MAINS

1. (4)	2. (3)	3. (2)	4. (3)	5. (1)
6. (1)	7. (3)	8. (4)	9. (2)	10. (3)

NEET

1. (4)	2. (2)	3. (4)
--------	--------	--------

DPMT

1. (4)	2. (3)	3. (3)	4. (2)	5. (1)
6. (2)	7. (3)	8. (1)	9. (2)	10. (2)
11. (4)	12. (4)	13. (3)	14. (3)	15. (2)
16. (2)	17. (3)	18. (4)	19. (3)	20. (3)
21. (4)	22. (1)	23. (1)	24. (1)	25. (1)
26. (4)	27. (1)			

AIIMS

1. (1)

BIOLOGY OLYMPIAD

1. (2)	2. (2)
--------	--------