

Subject: **Botany**  
Paper name: **Phanerogams**  
Paper No **BOT/II/EC/03**  
Semester: **2<sup>nd</sup> Semester**

**A. Multiple choice questions**

1. Gymnosperms are a group of plants that do not have
  - a) Seed
  - b) Fruit
  - c) Leaf
  - d) Stem
2. Coralloid roots are found in
  - a) *Pinus*
  - b) *Cycas*
  - c) *Gnetum*
  - d) All of the above
3. Manoxylic wood is
  - a) *Cycas*
  - b) *Ephedra*
  - c) *Taxus*
  - d) *Pinus*
4. Archegonia are absent in
  - a) *Cycas*
  - b) *Pinus*
  - c) *Gnetum*
  - d) *Cedrus*
5. Mycorrhiza is a characteristic feature of
  - a) *Pinus*
  - b) *Cycas*
  - c) *Ficus*
  - d) *Taxus*
6. The androecium with tetradynamous stamens is found in the family –
  - a) Ranunculaceae
  - b) Rosaceae

- c) Brassicaceae
  - d) Asteraceae
7. In the Asteraceae family, the type of inflorescence is –
- a) a spike
  - b) a capitulum
  - c) a panicle
  - d) solitary terminal
8. Bentham and Hooker's System of Classification is a type of
- a) Natural system
  - b) Artificial system
  - c) Phylogenetic system
  - d) None of above
9. Monadelphous type of androecium is found in which of the following family?
- a) Cucurbitaceae
  - b) Malvaceae
  - c) Poaceae
  - d) Acanthaceae
10. The fruit in Asteraceae is a
- a) berry
  - b) cypsela
  - c) caryopsis
  - d) capsule
11. The vascular bundles of a dicot stem are
- a) Closed, collateral and exarch
  - b) Open, collateral and exarch
  - c) Closed, collateral and endarch
  - d) Open, collateral and endarch
12. Radial vascular bundles are seen in case of
- a) Dicot stem
  - b) Monocot stem
  - c) Dicot leaf
  - d) Monocot root

13. Amphivasal vascular bundles are found in
- a) *Bignonia*
  - b) *Mirabilis*
  - c) *Dracaena*
  - d) *Nyctanthes*
14. Pith is small or absent in
- a) Monocot root
  - b) Dicot root
  - c) Monocot stem
  - d) Dicot stem
15. Which of the following tissue is mainly composed of dead cells
- a) Collenchyma
  - b) Xylem
  - c) Phloem
  - d) Epidermis
16. In flowering plants, the microspores are the
- a) pollen grains
  - b) egg cells
  - c) seeds
  - d) fruits
17. The nutritive layer of cells in the antheridial wall of a microsporangium is called
- a) epidermis
  - b) endothecium
  - c) tapetum
  - d) middle layer
18. The female gametophyte in seed plants is called
- a) embryos sac
  - b) ovary
  - c) ovule
  - d) gynoecium
19. In flowering plants, the megasporangium is also called the
- a) ovary
  - b) ovule
  - c) anther
  - d) embryo sac

20. In Angiosperms, the endosperm is a
- a) haploid
  - b) diploid
  - c) triploid
  - d) tetraploid
21. Pulse-yielding plant is
- a) *Gossypium herbaceum*
  - b) *Zea mays*
  - c) *Glycine max*
  - d) *Curcuma longa*
22. Beverage-yielding plant is
- a) *Coffea arabica*
  - b) *Michelia champaca*
  - c) *Tectona grandis*
  - d) *Mirabilis japonica*
23. Which of the following is a timber-yielding plant?
- a) *Michelia* sp
  - b) *Triticum* sp.
  - c) *Cuminum* sp.
  - d) *Glycine* sp.
24. *Gossypium hirsutum* is
- a) Timbers –yielding plant
  - b) Pulses-yielding plant
  - c) Fibers-yielding plant
  - d) Spices-yielding plant
25. In coconut palm, oil is extracted from
- a) Epicarp
  - b) Mesocarp
  - c) Endocarp
  - d) Endosperm
26. In Gymnosperms pollination is exclusively by
- a) Animal       ()
  - b) Wind         ()
  - c) Water        ()
  - d) Insects       ()
27. The roots of Gymnosperms Is

- a) Tap root      ( )
  - b) Adventitious roots      ( )
  - c) Rhizoids      ( )
  - d) Rhizophores      ( )
28. Gymnosperms are called naked seed plants because these lack
- a) Cotyledons      ( )
  - b) Endosperm      ( )
  - c) Ovary wall      ( )
  - d) Testa      ( )
29. In Gymnosperms, pollen drop is the
- a) Red drop      ( )
  - b) Pollen dropped by wind      ( )
  - c) Secretion Of nucellus      ( )
  - d) Water drops      ( )
30. In Gymnosperms how many male gametes are produced by each pollen grain
- a) 4      ( )
  - b) 3      ( )
  - c) 2      ( )
  - d) 1      ( )
31. Plants having flowers with free petals are place under
- a) Polypetalae      ( )
  - b) Monochlamydeae      ( )
  - c) Monocotyledons      ( )
  - d) Gamopetalae      ( )
32. Petals in Brassicaceae are
- a) Claw      ( )
  - b) Cruciform      ( )
  - c) Fused      ( )
  - d) Sepaloid      ( )
33. Inflorescence of family Lamiaceae is
- a) Verticillaster      ( )
  - b) Cyathium      ( )
  - c) Catkin      ( )
  - d) Spike      ( )

34. Inflorescence of family Asteraceae is  
a) Verticillaster ( )  
b) Spike ( )  
c) Capitulum ( )  
d) Catkin ( )
35. Usual fruit in the family Cucurbitaceae is  
a) Pome ( )  
b) Samara ( )  
c) Pepo ( )  
d) Hesperidium ( )
36. Mesophyll cells are found in  
(a) Leaf ( )  
(b) Stem ( )  
(c) Root ( )  
(d) All of the above ( )
37. In vascular bundle, cambium is  
(a) Meristematic tissue ( )  
(b) Sclerenchyma ( )  
(c) Parenchyma ( )  
(d) None of the above ( )
38. Exarch xylems are found in  
(a) Stem ( )  
(b) Root ( )  
(c) Leaf ( )  
(d) All of the above ( )
39. Medullary rays are seen in  
(a) Monocot stem ( )  
(b) Monocot root ( )  
(c) Dicot stem ( )  
(d) Dicot root ( )

40. Amphivasal vascular bundles are present in  
(a) *Mirabilis* stem ( )  
(b) *Bignonia* stem ( )  
(c) *Dracaena* stem ( )  
(d) *Cucurbita* stem ( )
41. A microspore mother cell forms  
(a) An ovule ( )  
(b) An embryo ( )  
(c) Pollen sac ( )  
(d) Pollen grains ( )
42. Development and formation of embryo sac inside the ovule is known as  
(a) Pollination ( )  
(b) Fertilisation ( )  
(c) Microsporogenesis ( )  
(d) Megasporogenesis ( )
43. In which type of embryo sac, whole of the mother cell takes part in the formation of the female gametophyte  
(a) Monosporic 8 nucleate ( )  
(b) Monosporic 4 nucleate ( )  
(c) Biporic ( )  
(d) Tetrasporic ( )
44. Which of the following is correct statement –  
(a) Gametes are diploid ( )  
(b) Spores are invariably haploid ( )  
(c) Spores and gametes are invariably haploid ( )  
(d) Gametes are haploid ( )
45. Endothecium layer of anther lobe is  
(a) Outside the epidermis ( )  
(b) Just inside the epidermis ( )  
(c) In the innermost layer ( )  
(d) In the middle region ( )
46. Bioplastics are made from  
(a) Rice ( )  
(b) Maize ( )

- (c) Wheat ☐
- (d) None of these ☐
47. One of the following plants is rich in protein
- (a) Lentil ☐
- (b) Cumin ☐
- (c) Fenugreek ☐
- (d) Belladonna ☐
48. The composition of cotton fibre is
- (a) Cellulose ☐
- (b) Callose ☐
- (c) Chitin ☐
- (d) Pectin ☐
49. The scientific name of Sal is
- (a) *Shorea robusta* ☐
- (b) *Tectona grandis* ☐
- (c) *Michelia champaca* ☐
- (d) None of the above ☐
50. Essential oil are those
- (a) Oils which are essential for human beings ☐
- (b) Oils which are essential for the plant which produce them ☐
- (c) Oils which are used as lubricants ☐
- (d) Oils which yields perfume ☐
51. Gymnosperms do not have
- a) Stem
- b) Leaf
- c) Fruit
- d) Root
52. Which one of the following is monoecious?
- a) Pinus
- b) Cycas
- c) Gnetum
- d) All of the above



53. Winged pollen grains are found in
- a) Pinus
  - b) Cycas
  - c) Gnetum
  - d) All of the above
54. Coralloid roots are present in
- a) Pinus
  - b) Cycas
  - c) Gnetum
  - d) All of the above
55. Archegonia are absent in
- a) Pinus
  - b) Cycas
  - c) Gnetum
  - d) All of the above
56. If anther is attached to filament only at one point dorsally and can move at the point freely, stamen is called
- a) Dorsifixed
  - b) Versatile
  - c) Basifixed
  - d) Adnate
57. Fruit in Cucurbitaceae is
- a) Berry
  - b) Pome
  - c) Legume
  - d) Pepo
58. Tetradynamous stamens are found in
- a) Malvaceae
  - b) Brassicaceae
  - c) Rubiaceae
  - d) Lamiaceae

59. Capitulum inflorescence with involucre of bracts having disc and ray florets is characteristics of -
- a) Asteraceae
  - b) Poaceae
  - c) Acanthaceae
  - d) Ranunculaceae
60. If two petals of whorl have both ends above, two have both ends below and remaining one above and the other end below the neighbouring petals, aestivation is called -
- a) Imbricate
  - b) Valvate
  - c) Quincuncial
  - d) None of the above
61. Anomalous secondary growth in dicot is due to
- a) Abnormal behaviour of cambium
  - b) Scattered vascular bundles
  - c) Vascular bundles arranged in rings
  - d) All of the above
62. Phloem wedges in the xylem are found in
- a) *Mirabilis*
  - b) *Bignonia*
  - c) *Dracaena*
  - d) None of the above
63. In isobilateral leaves stomata are found the epidermal layer of leaves on
- a) Both lower and upper surfaces
  - b) Upper surface only
  - c) Lower surface only
  - d) None of the two surfaces
64. Phloem parenchyma is absent in
- a) Dicot root
  - b) Dicot leaf
  - c) Monocot stem
  - d) Dicot stem

65. Normal cambium ring is not formed in anomalous structure of
- Pinus
  - Cycas
  - Gnetum
  - All of the above
66. In angiosperms, the embryo sac represents
- Young sporophyte
  - Male gametophyte
  - Female gametophyte
  - All othe above
67. In majority of angiosperms, the endosperm is
- Haploid
  - Diploid
  - Triploid
  - Tetraploid
68. The first cell of the female gametophyte is
- Megagametes
  - Megaspores
  - Microspores
  - Microgametes
69. The megaspore mother cell undergoes meiosis to form
- 3 haploid megaspores
  - 4 haploid megaspores
  - 2 haploid megaspores
  - 5 haploid megaspores
70. In a typical dicotyledonous type of embryo the oospore first divide
- Transversely
  - Longitudinally
  - Upwards
  - Downwards
71. Jute fibre is obtained from
- Stem
  - Leaf
  - Fruit
  - Root

72. Major food crops of the world belongs to the family
- a) Leguminosae
  - b) Solanaceae
  - c) Aricaceae
  - d) Gramineae
73. Which of the following crops could be preferred for sowing in order to enrich the soil with nitrogen?
- a) Tea
  - b) Mustard
  - c) Sunflower
  - d) Gram
74. In cotton the shorter outgrowth forms
- a) Fuzz
  - b) Lint
  - c) Bolls
  - d) Tinter
75. Weeds affect the crop plants by
- a) Killing of plants in the field before they grew
  - b) Dominating the plants to grow
  - c) Competing for various resources of crop (plants)causing low availability of nutrients
  - d) None of the above

**B. Fill up the blanks [15 (3 from each unit)]**

1. Pycnoxylic wood is found in \_\_\_\_\_
2. The term Gymnosperms was first used by \_\_\_\_\_
3. \_\_\_\_\_ is a characteristic feature of Gymnosperms.
4. Gynoecium is the \_\_\_\_\_ reproductive structure in flowering plants.
5. \_\_\_\_\_ is the largest family among Angiosperms.
6. China rose (*Hibiscus rosa-sinensis*) belongs to the \_\_\_\_\_ family.
7. Mesophyll cells are found in \_\_\_\_\_
8. The inner most layer of anther is tapetum whose function is \_\_\_\_\_
9. The \_\_\_\_\_ cambium is present inside the vascular bundle.
10. The fusion of a male gamete with the secondary nucleus is known as \_\_\_\_\_ fusion.
11. The endosperm in coconut (*Cocos nucifera*) is a \_\_\_\_\_ type of endosperm.
12. The fusion between male and female gametes is called \_\_\_\_\_
13. \_\_\_\_\_ is the protein occurs in maize.
14. Cumin belongs to the family \_\_\_\_\_
15. \_\_\_\_\_ is the Scientific name of Rice.
16. The female gametophyte of \_\_\_\_\_ is tetrasporic.
17. The roots of \_\_\_\_\_ is characterised by ectotrophic mycorrhiza.
18. The male cone of \_\_\_\_\_ is the largest among the plant kingdom.
19. Calyx is pappus or absent in the family of \_\_\_\_\_ .
20. Bicarpellary, syncarpous, superior ovary is found in the family of \_\_\_\_\_.
21. The individual unit of perianth is \_\_\_\_\_.
22. Bundle sheath is present in \_\_\_\_\_.
23. In Dracaena stem, the anomalous structure is due to \_\_\_\_\_ formation and its activity.
24. In monocot root, the pericycle gives rise to \_\_\_\_\_ roots only.
25. \_\_\_\_\_ is the first cell of male gametophyte.
26. In monocotyledonous type, the zygote divides \_\_\_\_\_ into basal cell and terminal cell.
27. The double fertilization was first observed by \_\_\_\_\_.
28. Maize male inflorescence is known as \_\_\_\_\_ .
29. The queen of spices is \_\_\_\_\_.
30. The edible portion of coconut is \_\_\_\_\_.

## Key Answers

### A. Multiple choice questions

1. b)	2. b)	3. a)	4. c)	5. a)	6. c)	7. b)
8. a)	9. b)	10. b)	11. d)	12. d)	13. c)	14. b)
15. b)	16. a)	17. c)	18. a)	19. b)	20. c)	21. c)
22. a)	23. a)	24. c)	25. d)	26. b)	27. a	28. c
29. c)	30. c)	31. b)	32. a)	33. c)	34. c	35. c
36. a	37. a	38. b	39. d	40. c	41. d	42. d
43. d	44. d	45. b	46. b	47. a	48. a	49. a
50. d	51. c	52. a	53. a	54. b	55. c	56. c
57. d	58. b	59. a	60. c	61. a	62. b	63. a
64. c	65. a	66. c	67. c	68. b	69. b	70. a
71. a	72. c	73. d	74. a	75. c		

### B. Fill up the blanks

1. *Pinus*
2. Theophrastus
3. Naked ovules
4. female
5. Asteraceae
6. Malvaceae
7. Leaf
8. Nutrition
9. Fascicular
10. triple
11. Nuclear
12. syngamy
13. Zein
14. Apiaceae
15. *Oryza sativa*
16. Gnetum
17. *Pinus*
18. *Cycas*
19. Asteraceae
20. Brassicaceae
21. Tepal
22. Monocot

- 23. Cambium
- 24. Lateral
- 25. Microspore
- 26. Transversely
- 27. Nawaschin(1898)
- 28. Tassel
- 29. Cardamom
- 30. Endosperm