

B-sc I<sup>st</sup> BOTANY

1. Indusium is absent in:  
a) Selaginella b) Dryopteris c) Pteridium d) Marsilea
2. Leptosporangiate Sporangia are seen in:  
a) Salvinia b) Marsilea c) Pteris d) all
3. Microphyllous Pteridophyte:  
a) Selaginella b) Pteridium c) Marsilea d) Sargassum
4. The gametophyte develops within the spore wall is called:  
a) Exosporic b) Endosporic c) Prostandrous d) all
5. Cambium is present in:  
a) Cycas b) Lycopodium c) Marsilea d) Salvinia
6. A collection of Sporangia on a receptacle covered with indusium is known as:  
a) Ramenta b) Sporophyll c) Sorus d) None.
7. Protocorm is found in:  
a) Lycopodium b) Selaginella c) Equisetum d) Marsilea
8. In Selaginella the megasporophyll is comparable to a structure in Angiosperm:  
a) Stamen b) Ovule c) Leaf d) Carpel
9. Amphiphloic Siphonostele is found in the rhizome of:  
a) Marsilea b) Equisetum c) Selaginella d) None
10. A stele without a central pith is called:  
a) Dictyostele b) Siphonostele c) Protostele
11. The vascular strands of a dictyostele are called:  
a) Meristele b) Apospory c) Apogamy d) Telomes

12. Selaginella lepidophylla is known as:

- a) club moss
- b) Monkey Puzzle plant
- c) Christmas plant
- d) Resurrection plant

13. Ligule and cones are seen in:

- a) Lycopodium
- b) Selaginella
- c) Isoetes
- d) Psilotum

14. An adaxial outgrowth from the base of the leaves in Selaginella is called:

- a) Ligule
- b) Trabacule
- c) Stipule
- d) Velum

15. Rhynia belongs to:

- a) Isoetales
- b) Psilophytales
- c) Lepidodendrales
- d) None

16. In which of the following plants spores germinate within in sporangium:

- a) Equisetum
- b) Lycopodium
- c) Selaginella
- d) Dryopteris

17. 13 celled male gametophyte of Selaginella has:

- a) 9 celled antheridium + 4 Prothallial cells.
- b) 10 celled antheridium + 3 Prothallial cells
- c) 12 celled antheridium + 1 Prothallial cells.
- d) 7 celled antheridium + 6 Prothallial cells.

18. In Selaginella stem trabaculae represent modified:

- a) Endodermal cells
- b) Cortical cells
- c) Phloem cells
- d) Pericycle cells

19. Seed of cycas is:

- a) Exalbuminous and Monocotyledonous.
- b) Exalbuminous and Dicotyledonous
- c) Albuminous and Monocotyledonous
- d) Albuminous and Dicotyledonous

20. Which of the following statement is not true about the stem of Ephedra:

- a) Stomata are sunken
- b) Pith is parenchymatous
- c) ✓ Vascular bundles are collateral and closed.
- d) Photosynthetic tissue is differentiated into palisade and spongy tissue.

21. Negatively geotropic roots are found in:

- a) Cycas
- b) Cactus
- c) Coleus
- d) Colocasia.

22. A microsporophyll of Pinus has:

- a) Two adaxial microsporangia.
- b) One abaxial microsporangium.
- c) ✓ Two abaxial microsporangia
- d) Four abaxial microsporangia

23. In which plane Mossile sporocarp shows complete gelatinous ring:

- a) ✓ V.L.S
- b) H.L.S
- c) V.T.S
- d) T.S

24. Heterospory and seed habit are exhibited by non flowering plant which also possesses:

- a) Bract
- b) Petiole
- c) Stipule
- d) Ligule

25. Which is intermediate between Conifers and cycads:

- a) Tsuga
- b) ✓ Ginkgo
- c) Ephedra
- d) Cupressus

26. Gymnosperm/cycas have a mode of pollination called:

- a) Zoophily
- b) ✓ Anemophily
- c) E
- d) Entomophily
- e) Hydrophily

27. Well developed archegonium with neck having 6 and 4 rows of neck cells occur in:

- a) Pteridophyte & Gymnosperm
- b) Bryophyte & Pteridophyte
- c) ✓ Gymnosperm & Flowering plants
- d) Gymnosperm only.

28. Vascular bundles of cycas/pinus stem are :

- a)  Conjoint collateral and open.
- b) Conjoint bicollateral and open.
- c) Conjoint collateral and closed
- d) Conjoint bicollateral and closed

29. Which of the following plants is known as "Jointed fir"

- a) cycas b) Pinus c) Taxus d) Ephedra.

30. The concept of stele was given by :

- a) Kidston and Lang b) Prof. D. D. Pant
- c)  Van Tieghem and Douliot d) Jeffrey

31. Ovules in gymnosperm is generally :

- a) Anatripous & Biternic b) Orthotropous & Biternic
- c)  Orthotropous & Uniternic d) Anatripous & Uniternic

32. The species of Marsilea are:

- a) Xerophytic or Epiphytic b) Terrestrial or Mesophytic
- c)  Aquatic or Amphibious d) None of these

33. Which of the following is commonly known as "Chilgoza pine" :

- a) Pinus walllichiana b) Pinus gerardiana
- c) Pinus roxburghii d) Pinus molleusii

34. Which of the following is preserved best:

- a)  Pollens b) Leaf c) Algal material
- d) Fungal hyphae

35. The root hairs arise in pairs:

- a) Marsilea b) Equisetum
- c) Dryopteris d) Cycopodium

36. Who among the following is considered as "Father of Indian Palaeobotany" :

- a)  Prof. Birbal Sahni b) Prof. D. D. Pant
- c) Dr. B. C. Srivastava d) Meghnad Saha

37. The drug obtained from Ephedra :

- a)  Ephedrine
- b) Tannin
- c) Both a & b
- d) None

38. Trabeculated Endodermis with Casparian strips are found in :

- a) Lycopodium
- b) Selaginella
- c) Equisetum
- d) Marsilea

39. Which of the following structure does not occur in Selaginella :

- a)  Ligule
- b)  Trabeculae
- c)  Lamella
- d)  Rhizophore

40. Which of the following is an Amber :

- a) A hull
- b)  Fossil resin
- c) A plant
- d) A chemical

41. Which of the following is commonly called a "Bracken fern" :

- a)  Pteridium
- b) Nephrolepis
- c) Adiantum
- d) Pteris

42. A small heart shaped gametophyte called a prothallus is part of the life cycle of the :

- a) Mosses
- b)  Fern
- c) Liverworts
- d) Cycads

43. The fern in which the entire sporangium develops from single superficial cell of the sporophyll are known as :

- a) unisporangiate
- b) Mesosporangiate
- c)  Eusporangiate
- d) Leptosporangiate

44. The antherozoids of Dryopteris are :

- a)  coiled and multiflagellate
- b) Sickle-shaped and biflagellate
- c) coiled and biflagellate
- d) Sickle shaped multiflagellate

45. Actinostele is found in:

- a) Lycopodium serratum b) Lycopodium cernuum  
c) Lycopodium clavatum d) Lycopodium volubile

46. Which of the following does not have pith:

- a) Protostele b) Solenostele c) Siphonostele d) Dictyostele

47. In which stele xylem are in the form of patches:

- a) Mixed Protostele b) Protostele  
c) Haplostele d) Both b & c

48. According to available fossil records which of the following are the first land vascular plants:

- a) Cycads b) Lycopods c) Psilophytes d) Horsetails

49. The Rhynian flora is best seen in:

- a) Devonian Period b) Carboniferous Period  
c) Silurian Period d) Triassic Period.

50. Selaginella shows certain conditions which are essential for the formation of seeds:

- a) Like seed plants, it produces two types of spores.  
b) In most species only one functional megaspore mother cell is produced.  
c) Presence of a Enclosure around the megasporangium is similar to the integument.  
d) All above.

51. If all the spores are of same size and shape, the plant is said to be:

- a) Aposporous b) Homosporous  
c) Heterosporous d) None of the above.

52. Which of the following orders was not included in Phyllospemae by Sahnii:

- a) Cycadales b) Cycadofilicales  
c) Bennettitales d) Cordaitales

53. Who among the following classified Gymnosperm on the basis of wood structure:

- a)  Seward    b) Engler & Prantl  
c) Chamberlain    d) Pant

54. Endosperm in gymnosperm is:

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

55. Siphonogamous is:

- a) fertilization with the help of chalazae.  
b) fertilization with the help of integument  
c)  fertilization with the help of pollen tube  
d) All of the above

56. In which period gymnosperm were present in the form of dominant vegetation:

- a)  Jurassic & Cretaceous    b) Triassic & Jurassic  
c) Jurassic & Devonian    d) None of the above.

57. Which of the following sp. of Pinus has trifoliate spur:

- a) P. sylvestris    b) P. merkusii  
c)  P. gerardiana    d) P. wallichiana

58. Which of the following is not a characteristic of coniferales:

- a) Pycnoxylic wood    b) Motile male gamete  
c) Presence of resin canal    d)  fertilization siphonogamous

59. Which of the following sp. of cycas can be used as a source of Nitrogen for some crops:

- a) C. pectinata    b) C. rumphii  
c) C. siamensis    d)  C. revoluta

60. Biciliate androzooids are found in which of the following:

- a)  Selaginella & Lycopodium    b) Fernis & Dryopteris  
c) Rhizopus    d) Spirogyra

61. Male gametophyte of Selaginella is found:  
a)  with in the microspore b) outside the microspore  
c) partially outside the microspore  
d) partially inside the microspore

62. Rhizophore of Selaginella is:  
a) Root b) stem c)  organ-sui-generis d) Both a & b.

63. The archegonia of Selaginella can be differentiated by:  
a) Embedded venter b) Absence of stalk  
c) Short Neck d)  All of the above.

64. Formation of gametophyte like structure from sporophyte without reduction division is called (i.e. without formation of spores):  
a)  Apospory b) Apogamy  
c) Agametospermy d) None

65. The mature ligule has a prominent basal portion is called:  
a) Protocorm b) Sclerotium  
c) Rhizomorph d)  Glassopodium

66. In Pteridophyte, meiosis occurs at the stage of:  
a) Gamete formation b)  Spore formation  
c) Prothallus formation d) All of the above

67. Coralloid roots of cycas is distinguished from Angiosperm roots by:  
a)  presence of Algal zones b) Absence of Pith  
c) Absence of Algal zones d) Having xylem tissue

68. Mucilagenous canals in cycas are found in:  
a) Vascular bundles b) Cortex & Pith  
c)  cortex of stem d) Pith



69. Proembryo in Pinus is:  
 a) Four tiered b) Three tiered c) Two tiered d) None
70. Megasporophyll of cycas is equivalent to which part of Angiosperm:  
 a) Stamen b) Petal c) Sepal d) Carpel.
71. In which order of Gymnosperm only fossils are present:  
 a) Coniferales b) Gnetales  
 c) Cycadofilicales d) Ginkgoales
72. Which of the following does not form true seeds:  
 a) Angiosperms b) Gymnosperms  
 c) Pteridophytes d) None of the above
73. The number of megaspore in a megasporangium of Selaginella is:  
 a) usually 4 b) 1 c) 48  
 d) is equal to the number of microspore
74. The number of Neck canal cell in Cycas are:  
 a) four b) Two c) Nil d) one but with two nuclei
75. Which of the following types of stele are found in Lycopodium:  
 a) Dictyostele, Protostele b) Siphonostele, Polystele  
 c) Actinostele, Plectostele, mixed Protostele  
 d) Only Protostele.
76. Cross section of the stem of Lycopodium is divided into:  
 a) Epidermis, Cortex, stele b) Epidermis, Cortex, Pericycle  
 c) Epidermis & cortex d) Epidermis, Cortex, Endodermis, Pericycle & stele.

77. Which cells represent the first cell of gametophytic generation?  
a)  Spores b)  Gametes c)  microspores d)  spore tetrad

78. Which of the following is not a feature of Gymnosperm?  
a)  Bears flower b)  Tall plant  
c)  Perennials d)  Seed production

79. Identify the wrong combinations:  
a)  Dryopteris - Rhizome b)  Cycas - coralloid roots  
c)  Volvox - colonial form d)  Marchantioides - pseudocelator

80. Girdling leaf traces are the characteristic feature of the stem of:  
a)  Cenchrus b)  Ephedra c)  Cycas d)  Pinus

81. In cycas when the pollen grain is liberated from the Microsporangium, it has:  
a)  One prothallial, one antheridial and one generative cell  
b)  One prothallial, one antheridial & one tube cell  
c)  One prothallial, one stalk & one body cell.  
d)  One prothallial, one generative & one tube cell.

82. The dominant generation in Peridophyte is:  
a)  Triploid b)  diploid c)  haploid d)  gametophyte

83. The Earth's first forests were formed of plants belonging to:  
a)  Psilopsida b)  Lycopsida c)  Sphenopsida  
d)  Pteropsida

84. The Rhynian flora is best seen in:  
a)  Devonian Period b)  Carboniferous Period  
c)  Silurian Period d)  Triassic Period

85. Who proposed the stelar theory:

- a) Druery
- b) Whittier and Steeves
- c) Zimmermann
- d) Van Tieghem & Douliot

86. Which Pteridophyte is also known as "ground pine"?

- a) Lycopodium
- b) Selaginella
- c) Marsilea
- d) Ophioglossum

87. Selaginella is a member of:

- a) Equisetopsida
- b) Triglopsiada
- c) Calamopsida
- d) Leptosporangiopsida

88. Fertilization of Ephedra is:

- a) Chalazogamous
- b) Siphonogamous
- c) Zooidogamous
- d) Oogamous

89. Which of the following is a character of Gymnosperm wood?

- a) Porous
- b) Diffused Porous
- c) Ring Porous
- d) Non Porous

90. The group of sporangia (coenosorus) in Pteridium is covered by:

- a) false inducium
- b) True inducium
- c) Both a & b
- d) None

91. Haploid structure in Pinus are:

- a) Pollen grains, Leaves, roots
- b) Megaspore root
- c) megaspore, Endosperm Embryo
- d) Megaspore, Pollen grain, Endosperm

92. The sporangium developed from a group of cells it is called:

- a) Leptosporangiate development
- b) Eusporangiate development
- c) Heterosporangiate development
- d) None of the above

93. Cleavage polyembryony is found in:

- a) Cycas
- b) Pinus
- c) Cycas & Pinus both
- d) Absent in both

94. The young leaves of cycas have:  
a)  Valvate vernation  Circinate vernation  
c) Imbricate vernation d) Twisted vernation

95. Inverted Omega shaped arrangements of vascular bundles is found in:  
a)  Rachis of cycas b) Leaflet of cycas  
c) Root of cycas d) old stem of cycas

96. cycas revoluta is widely grown as:  
a) Medicinal plant  ornamental plant  
c) wood yielding plant d) oil giving plant

97. Which one of the following is commonly called a "walking fern":  
a) Pteris b) Nephrolepis  Adiantum d) Pteridium

98. Circinate vernation in ferns refers to:  
a)  uncoiling of young leaves b) System of leaf-gaps in stem  
c) Presence of adventitious roots on the rhizome.  
d) Presence of sori on the leaf surface.

99. Which are the water ferns:  
a)  Massilea & Azolla b) Equisetum & Adiantum  
c) Lycopodium & Selaginella d) None of these

100. Which light is most effective in inducing apogamous development of sporophyte:  
a)  far red b) green c) red d) white