



S-ORBIT

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IIT-JEE | MEDICAL | Foundations

S-ORBIT

PLANT KINGDOM

MOST IMPORTANT QUESTION



pc
[Pick the date]

1. Besides paddy fields cyanobacteria are also found inside the vegetative part of:

- (a) Cycas
- (b) Equisetum
- (c) Psilotum
- (d) Pinus

2. Isogamous condition with non-flagellated gametes is found in:

- (a) Spirogyra
- (b) Volvox
- (c) Fucus
- (d) Chlamydomonas

3. Read the following statements (1-5) and answer the question which follows them.

1. **In liverworts, mosses and ferns gametophytes are free-living**
2. **Gymnosperms and some ferns are heterosporous.**
3. **Sexual reproduction in Fucus, Volvox, and Albugo is oogamous**
4. **The sporophyte in liverworts is more elaborate than that in mosses**
5. **Both, Pinus and Marchantia are dioecious**

How many of the above statements are correct?

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

4. Which of the following is not correctly matched for the organism and its cell wall degrading enzyme?

- (a) Plant cells-Cellulase
- (b) Algae-Methylase
- (c) Fungi-Chitinase
- (d) Bacteria-Lysozyme

5. The plant body is thalloid in

- (a) Funaria
- (b) Sphagnum
- (c) Salvinia
- (d) Marchantia

6. What is common in all three, Funaria, Dryopteris, and Ginkgo?

- (a) Independent sporophyte
- (b) Presence of archegonia
- (c) Well developed vascular tissues
- (d) Independent gametophyte

7. Which one of the following is wrongly matched?

- (a) Nostoc-Water blooms
- (b) Spirogyra-Motile gametes
- (c) Sargassum-Chlorophyll c
- (d) Basidiomycetes-Puffballs

8. Which one of the following shows isogamy with non-flagellated gametes?

- (a) Sargassum
- (b) Ectocarpus
- (c) Ulothrix
- (d) Spirogyra

9. Which one of the following is wrong about Chara?

- (a) Upper oogonium and lower round antheridium
- (b) Globule and nucule present on the same plant
- (c) Upper antheridium and lower oogonium
- (d) Globule is male reproductive structure

10. Which of the following is responsible for peat formation?

- (a) Marchantia
- (b) Riccia
- (c) Funaria
- (d) Sphagnum

11. An alga that can be employed as food for the human being is:

- (a) Ulothrix
- (b) Chlorella
- (c) Spirogyra
- (d) Polysiphonia

12. In which of the following gametophyte is not independent free living?

- (a) Marchantia
- (b) Pteris
- (c) Pinus
- (d) Funaria

13. Read the following five statements (A to E) and select the option with all correct statements:

(A) Mosses and Lichens are the first organisms to colonize bare rock.

(B) Selaginella is a homosporous pteridophyte

(C) Coralloid roots in Cycas have VAM

(D) Main plant body in bryophytes is gametophytic, whereas in pteridophytes it is sporophytic

(E) In gymnosperms, male and female gametophytes are present within sporangia located on the sporophyte

- (a) (B), (C), and (D)
- (b) (A), (D), and (E)
- (c) (B), (C), and (E)
- (d) (A), (C), and (D)

14. Male gametes are flagellated in:

- (a) Anabaena
- (b) Ectocarpus
- (c) Spirogyra
- (d) Polysiphonia

15. Which one of the following statements is wrong?

- (a) Agar-agar is obtained from Gelidium and Gracilaria
- (b) Chlorella and Spirulina are used as space food

- (c) Mannitol is stored food in Rhodophyceae
- (d) Algin and carrageen are products of algae

16. Male gametophyte in angiosperms produces:

- (a) Single sperm and vegetative cell
- (b) Single sperm and two vegetative cells
- (c) Three sperms
- (d) Two sperms and a vegetative cell

17. In angiosperms, microsporogenesis, and megasporogenesis :

- (a) form gametes without further divisions
- (b) Involve meiosis
- (c) occur in ovule
- (d) occur in anther

SHOW ANSWER AND EXPLANATION

18. Which one is the wrong statement?

- (a) Mucor has biflagellate zoospores
- (b) Haploid endosperm is a typical feature of gymnosperms
- (c) Brown algae have chlorophyll a and c and fucoxanthin
- (d) Archegonia are found in Bryophyta, Pteridophyta, and Gymnosperms.

19. Select the correct statement:

- (a) Gymnosperms are both homosporous and heterosporous
- (b) Salvinia, Ginkgo and Pinus all are gymnosperms
- (c) Sequoia is one of the tallest trees
- (d) The leaves of gymnosperms are not well adapted to extremes of climate

20. In bryophytes and pteridophytes, transport of male gametes requires

- (a) Wind
- (b) Insects
- (c) Birds
- (d) Water

21. An example of colonial alga is :

- (a) Volvox
- (b) Ulothrix
- (c) Spirogyra
- (d) Chlorella

22. Zygotic meiosis is characteristic of:

- (a) Fucus
- (b) Funaria
- (c) Chlamydomonas
- (d) Marchantia

23. Life cycle of Ectocarpus and Fucus respectively are:

- (a) Diplontic, Haplodiplontic
- (b) Haplodiplontic, Diplontic
- (c) Haplodiplontic, Haplontic
- (d) Haplontic, Diplontic

24. Select the mismatch

- (a) Cycas – Dioecious
- (b) Salvinia – Heterosporous
- (c) Equisetum – Homosporous
- (d) Pinus – Dioecious

25. Double fertilization is exhibited by :

- (a) Algae
- (b) Fungi
- (c) Angiosperms
- (d) Gymnosperms

26. Cyanobacteria are classified under

- (a) Protista
- (b) Plantae
- (c) Monera
- (d) Algae

27. Fusion of two motile gametes which are dissimilar in size is termed as

- (a) oogamy
- (b) isogamy
- (c) anisogamy
- (d) zoogamy

28. Holdfast, stipe, and frond constitutes the plant body in case of

- (a) Rhodophyceae
- (b) Chlorophyceae
- (c) Phaeophyceae
- (d) All of these

29. A plant shows a thallus level of organization. It shows rhizoids and is haploid. It needs water to complete its life cycle because the male gametes are motile. Identify the group to which it belongs to

- (a) pteridophytes
- (b) gymnosperms
- (c) monocots
- (d) bryophytes

30. A prothallus is

- (a) a structure in pteridophytes formed before the thallus develops
- (b) a sporophytic free-living structure formed in pteridophytes
- (c) a gametophyte free-living structure formed in pteridophytes
- (d) a primitive structure formed after fertilization in Pteridophytes

31. Plants of this group are diploid and well adapted to extreme conditions. They grow bearing sporophylls in compact structures called cones. The group in reference is

- (a) monocots
- (b) dicots
- (c) pteridophytes
- (d) gymnosperms

32. The embryo sac of an angiosperm is made up of

- (a) 8 cells
- (b) 7 cells and 8 nuclei
- (c) 8 nuclei
- (d) 7 cells and 7 nuclei

33. If the diploid number of a flowering plant is 36. What would be the chromosome number in its endosperm?

- (a) 36
- (b) 18
- (c) 54
- (d) 72

34. Protonema is

- (a) haploid and is found in mosses
- (b) diploid and is found in liverworts
- (c) diploid and is found in pteridophytes
- (d) haploid and is found in pteridophytes

35. The giant redwood tree (*Sequoia sempervirens*) is a/an

- (a) angiosperm
- (b) free fern
- (c) pteridophyte
- (d) gymnosperm

36. Red algae have green chlorophyll-a that is like the one present in

- (a) green algae
- (b) cyanobacteria
- (c) mosses
- (d) higher plants

37. Which one of the following is generally found in cool seas?

- (a) red algae
- (b) brown algae

- (c) green algae
- (d) blue-green algae

38. Floridean starch is found in

- (a) red algae
- (b) brown algae
- (c) green algae
- (d) blue-green algae

39. Fucoxanthin is found in

- (a) red algae
- (b) brown algae
- (c) green algae
- (d) blue-green algae

40. The zoospore of Ulothrix has

- (a) one flagellum
- (b) two flagella
- (c) three flagella
- (d) four flagella

41. A diploid structure with a tough coat produced during unfavorable conditions are

- (a) zoospore
- (b) zygote
- (c) zygospore
- (d) spore

42. A multicellular green algae is

- (a) Chondrus
- (b) Laminaria
- (c) Chlamydomonas
- (d) Ulva

43. Which one of the following does not have flagellated male gamete?

- (a) red algae

- (b) brown algae
- (c) mosses
- (d) green algae

44. Which one of the following groups led to the evolution of land plants?

- (a) Rhodophyta
- (b) Phaeophyta
- (c) Chlorophyta
- (d) Cyanophyta

45. A distinct feature of bryophytes, when compared to other green plants, is that they

- (a) produce spores
- (b) have sporophyte attached to the gametophyte
- (c) lack xylem
- (d) lack roots

46. The first land inhabiting plants are

- (a) pteridophytes
- (b) bryophytes
- (c) gymnosperms
- (d) angiosperms

47. Which of the following is not a characteristic feature of bryophytes?

- (a) presence of archegonia
- (b) water is essential for fertilization
- (c) an independent photosynthetic sporophyte
- (d) motile sperms

48. Which of the following bryophyte is of great economic importance?

- (a) funaria
- (b) liverworts
- (c) sphagnum
- (d) chondrus

49. Water is essential for the life cycle of Funaria because

- (a) it will dry without water
- (b) fertilization takes place in water
- (c) it is a hydrophyte
- (d) the growth will remain stunted in the absence of water

50. Which of the following is likely to occur on sea coasts?

- (a) mosses
- (b) green algae
- (c) red algae
- (d) brown algae

51. A moss differs from a fern in having

- (a) swimming sperms
- (b) alternation of generation
- (c) dependent gametophyte
- (d) independent gametophyte

52. Which of the following groups produces spores, but lacks vascular tissue?

- (a) fungi
- (b) pteridophytes
- (c) gymnosperms
- (d) angiosperms

53. The protonema of moss is

- (a) diploid
- (b) haploid
- (c) sporophyte
- (d) sporangium

54. The male gametophyte in higher plants is represented by

- (a) microspore
- (b) anther

- (c) pollen grain
- (d) male gamete

55. Which of the following conditions is found in Pinus but not Pteris?

- (a) conducting tissue
- (b) uncovered seeds
- (c) presence of sporangia
- (d) secondary growth

56. Which of the following is an amphibian of the plant kingdom?

- (a) red algae
- (b) fungi
- (c) moss
- (d) pines

57. A Pinus does not have

- (a) resin canals
- (b) xylem tracheids
- (c) ovuliferous scales
- (d) two cotyledons

58. Gymnosperms do not bear fruits because

- (a) they are not pollinated
- (b) they lack ovary
- (c) they produce spores
- (d) they do not have seeds

59. Which of the following has a dominant sporophytic generation?

- (a) Dryopteris
- (b) Funaria
- (c) Spirogyra
- (d) Liverworts

60. Which of the following groups produce seeds but lack flowers?

- (a) bryophytes
- (b) fungi

- (c) pteridophytes
- (d) gymnosperm

61. Irish moss is the common name of a particular

- (a) algae
- (b) moss
- (c) lichen
- (d) fungi

62. Agar-Agar is produced from

- (a) blue-green algae
- (b) red algae
- (c) brown algae
- (d) green algae

63. Kelp is a kind of

- (a) an aquatic plant
- (b) a moss
- (c) an algae
- (d) a fungus

64. Cuscuta is a

- (a) xerophyte
- (b) parasite
- (c) sporophyte
- (d) epiphyte

65. The pitcher plant is

- (a) autotrophic
- (b) saprophytic
- (c) parasitic
- (d) insectivorous

66. The sporangia of a fern develop on

- (a) roots
- (b) stems

- (c) rhizoids
- (d) leaves

67. An ovule is the equivalent of

- (a) megasporangium
- (b) megasporophyll
- (c) megaspore
- (d) female gamete

68. In Pinus the fertilization takes place in the

- (a) 1st-year cone
- (b) 2nd-year cone
- (c) 3rd-year cone
- (d) microsporangia

69. Wolffia a small plant about 1 mm in diameter is a

- (a) moss
- (b) pteridophyte
- (c) gymnosperm
- (d) angiosperm

70. Carpels of angiosperms are equivalent to

- (a) sporophyll
- (b) sporangia
- (c) spore
- (d) zygospore

71. A monocot angiosperm has

- (a) taproot
- (b) corolla in sets of 5
- (c) scattered vascular bundles
- (d) 6 groups of xylem

72. A plant showing reticulate venation and a woody stem is a

- (a) pteridophyte
- (b) gymnosperm

- (c) monocot
- (d) dicot

73. Chilgozas are the seeds of

- (a) a monocot
- (b) a dicot
- (c) conifer
- (d) false fruit

74. Frond is a term given to the leaves of

- (a) a moss
- (b) a fern
- (c) a conifer
- (d) an angiosperm

75. The group of plants having vascular tissue is called

- (a) Bryophyta
- (b) Pteridophyta
- (c) angiosperms
- (d) Tracheophyta

76. Which group has seeds enclosed in fruits?

- (a) Gymnospermae
- (b) Angiospermae
- (c) phanerogamae
- (d) pteridophytes

77. Ferns belong to the following group

- (a) thallophyta
- (b) Bryophyta
- (c) Pteridophyta
- (d) Gymnospermae

78. Lichens have a symbiotic relationship between

- (a) alga and bacteria
- (b) alga and fungus
- (c) bacteria and fungus
- (d) fern and bacteria

79. Dicotyledon plants generally have

- (a) fibrous roots
- (b) pentamerous flowers
- (c) parallel venation in leaves
- (d) trimerous flowers

80. Mushroom belongs to the group

- (a) algae
- (b) fungi
- (c) lichens
- (d) Bryophyta

81. Seed bearing plants include

- (a) pteridophytes and gymnosperms
- (b) bryophytes and pteridophytes
- (c) gymnosperms and angiosperms
- (d) bryophytes and angiosperms

82. Both chlorophyll a and b are present in

- (a) Rhodophyceae
- (b) Phaeophyceae
- (c) Chlorophyceae
- (d) None of these

83. Bryophytes can be separated from algae because they

- (a) are thalloid forms
- (b) have no conducting tissue
- (c) possess archegonia
- (d) contain chloroplast

84. The female reproductive part of bryophytes is

- (a) Antheridium
- (b) Oogonium
- (c) Archegonium
- (d) Sporangium

85. Which of the following is called amphibians of the plant kingdom?

- (a) Bryophytes
- (b) Pteridophytes
- (c) Gymnosperms
- (d) Algae

86. Bryophytes are of

- (a) great economic value
- (b) no value at all
- (c) great ecological importance
- (d) a lot of aesthetic value

87. The common characteristic between bryophytes and pteridophytes are

- (a) vascularisation
- (b) terrestrial habit
- (c) water for fertilization
- (d) independent sporophyte

88. The plant group that produces spores and embryo but lacks vascular tissues and seeds is

- (a) Pteridophyta
- (b) Rhodophyta
- (c) Bryophyta
- (d) Phaeophyta

89. A plant having seeds but lacking flowers and fruits belongs to

- (a) pteridophytes
- (b) mosses

- (c) ferns
- (d) gymnosperms

90. Pteridophytes differ from mosses/bryophytes in possessing

- (a) independent gametophyte
- (b) well developed vascular system
- (c) archegonia
- (d) flagellate spermatozoids

91. In Chlorophyceae, sexual reproduction occurs by

- (a) isogamy and anisogamy
- (b) isogamy, anisogamy, and oogamy
- (c) oogamy only
- (d) anisogamy and oogamy

92. Bryophytes are dependent on water because

- (a) water is essential for fertilization for their homosporous nature
- (b) water is essential for their vegetative propagation
- (c) the sperms can easily reach up to egg in the archegonium
- (d) archegonium has to remain filled with water for fertilization

93. Which of the following is without exception in angiosperms?

- (a) Presence of vessels
- (b) Double fertilisation
- (c) Secondary growth
- (d) Autotrophic nutrition

94. Agar is commercially obtained from

- (a) red algae
- (b) green algae
- (c) brown algae
- (d) blue-green algae

95. Brown algae are characterized by the presence of

- (a) phycocyanin
- (b) phycoerythrin

- (c) fucoxanthin
- (d) haematochrome

96. Chloroplast of Chlamydomonas is

- (a) stellate
- (b) cup-shaped
- (c) collar-shaped
- (d) spiral

97. Sexual reproduction involving the fusion of two cells in the Chlamydomonas is

- (a) isogamy
- (b) homogamy
- (c) somatogamy
- (d) hologamy

98. Prothallus (gametophyte) gives rise to fern plant (sporophyte) without fertilization. It is

- (a) apospory
- (b) apogamy
- (c) parthenocarpy
- (d) parthenogenesis

99. Moss peristome takes part in

- (a) spore dispersal
- (b) photosynthesis
- (c) protection
- (d) absorption

100. Which one of the following is a living fossil?

- (a) Pinus
- (b) Opuntia
- (c) Ginkgo
- (d) Thuja

1-A	2-A	3-B	4-B	5-D
6-B	7-B	8-D	9-C	10-D
11-B	12-C	13-B	14-B	15-C
16-D	17-B	18-A	19-C	20-D
21-A	22-C	23-B	24-D	25-C
26-C	27-C	28-C	29-D	30-C
31-D	32-B	33-C	34-A	35-D
36-B	37-B	38-A	39-B	40-D

41-C	42-D	43-A	44-C	45-B
46-A	47-C	48-C	49-B	50-D
51-C	52-A	53-A	54-C	55-B
56-C	57-D	58-B	59-A	60-D
61-A	62-B	63-C	64-B	65-D
66-D	67-A	68-B	69-D	70-A
71-C	72-D	73-C	74-B	75-D
76-B	77-C	78-B	79-B	80-B



81-C	82-C	83-C	84-C	85-A
86-C	87-C	88-C	89-D	90-B
91-B	92-C	93-B	94-A	95-C
96-B	97-A	98-B	99-A	100-C