



BIOLOGY

BOOKS - TRUEMAN BIOLOGY

PLANT KINGDOM

Multiple Choice Question

1. A full mature plant body, undifferentiated into root, stem and leaf is called.

A. thallus

B. coenocytic

C. hyphae

D. callus

Answer: A



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2. Algae are included in

A. Thallophytes

B. spermatophytes

C. Embryophytes

D. Tracheophytes

Answer: A



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3. Algae are characterised by

- A. thalloid plant body
- B. phycobilins
- C. unicellular sex organs
- D. mechanical tissue.

Answer: A



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4. Algae resemble fungi in the presence of similar

- A. reproductive structure
- B. cell wall
- C. similar reserve food
- D. similar mode of nutrition

Answer: A



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5. Green algae are ancestors of angiosperms/land plants because

- A. both have vascular bundles
- B. both have starch as reserve food

C. both have jacketed sex organs

D. all of the above

Answer: B



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6. Classification of Algae into 11 classes was made by Fritsch on the basis of flagellation, pigmentation and type of reserve food. Out of this, the main criteria used in algal classification grouping of algae is

A. chemical composition of cell wall

B. type of pigmentation

C. nature of food storage

D. shape and colony formation.

Answer: B



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7. Study of Algae is called

A. phycology

B. phytology

C. mycology

D. phenology

Answer: A



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8. Choose the correct statement.

A. Algae show embryo stage

B. Algae show only haplontic life cycle

C. Algae are plants as they possess cell wall, chl a and starch food.

D. all of the above

Answer: C



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9. All algae possess

- A. chl a and b
- B. chl a, carotenes and phycobilins
- C. chl b and carotenes
- D. chl a and carotene

Answer: D



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10. Largest a cellular, green, marine algae ,popularly called umbrella plant is

A. Ulva

B. Acetabularia

C. Spirogyra

D. Volvox

Answer: B



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11. Kelps are

A. fresh water algae

B. marine green algae

C. large marine parenchymatous brown algae

D. large marine parenchymatous and algae.

Answer: C



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12. Red eye spot (stigma) is meant for

A. movement

B. vision

C. photoreception

D. photosynthesis

Answer: C



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13. Red snow is caused by

- A. stigma
- B. chloroplast
- C. hypnospor
- D. aplanospore

Answer: C



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14. The diploid stage is represented by one celled zygote only in

A. Chlamydomonas

B. Spirogyra

C. both 1 and 2

D. Funaria

Answer: C



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15. Meiosis in spirogyra/Chlamydomonas / Ulothrix occurs

A. as the zygospore germinates

B. during conjugation

C. during palmella formation

D. during formation of gametes

Answer: A



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16. The product of conjugation of Spirogyra is called

A. zoospore

B. zygospore

C. endospore

D. akinete

Answer: B



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17. Asexual spores with flagella in algae are called

- A. zoospore
- B. zygospores
- C. aplanospores
- D. hypnospores

Answer: A



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18. In spriogyra lateral conjugation takes place in the cells of

- A. two adjacent cells of same filament
- B. two cells of different filaments
- C. among three filaments
- D. within one cell of a filament

Answer: B



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19. What is the shape of chloroplast in Spirogyra ?

A. spiral, bank like

B. cup like

C. stellate like

D. U-like

Answer: A



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20. Gametes of Spirogyra are

A. biflagellated

B. uniflagellated

C. non-flagellated

D. diploid

Answer: C



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21. Choose the correct statement in Spirogyra.

- A. Filaments showing scalariform conjugation are always dioecious
- B. Filaments showing lateral conjugation are always monoecious
- C. Filaments showing lateral conjugation may be monoecious

D. Asexual reproduction occurs by zoospores.

Answer: B



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22. Agar-agar is obtained from

A. red algae

B. green algae

C. kelps

D. yellow algae

Answer: A



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23. Red algae show maximum photosynthesis in blue green light. Their main pigment to trap this light is

- A. chlorophyll
- B. phycoerythrin
- C. chl a and xanthophyll
- D. carotenes.

Answer: B



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24. Main pigment in phaeophyceae (Brown algae) is

- A. phycocyanin
- B. phycoerythrin
- C. fucoxanthin
- D. chlorophyll b

Answer: C



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25. Food reserve in Rhodophyta is :-

- A. floridean starch
- B. laminarian starch
- C. animal starch

D. none of these

Answer: A



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26. Reserve food in Phaeophyceae is

A. laminarin and manitol

B. glycogen and sorbitol

C. floridean starch

D. glucose and starch.

Answer: A



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27. Sieved septa/trumpet hyphae occur in

- A. kelps
- B. All green algae
- C. All red algae
- D. Marine algae.

Answer: A



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28. Agar,Alginic acid,Carrageenan and Funori in sea weeds
are

- A. 1.proteins
- B. 2.phycocolloids
- C. 3.acids
- D. 4.fats

Answer: B



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29. Red algae are similar to blue-green algae in possession of

- A. similar reserve food
- B. nucleus

C. phycobilins

D. gas-vascuoles

Answer: C



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30. Red algae are able to grow deep in sea as

A. 1.they can trap blue green light of short wave

length in deep layer of water

B. 2.they have chlorophyll b to trap blue green light in

deep layer of water

C. 3.Both 1 and 2

D. 4.both wrong.

Answer: A



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31. Irish Moss is

A. Chondrus (a red alga)

B. Ulva (green alga)

C. Porphyra (red alga)

D. Gelidium (red alga)

Answer: A



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32. A colourless parasitic red algae is

- A. Harveyella
- B. Batrachospermum
- C. Porphyra (red alga)
- D. Cephaleuros

Answer: A



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33. Red rust of tea is caused by

- A. *Cephaleuros parasiticus*
- B. *Puccinia graminis*
- C. *Harveyella*
- D. *Chlamydomonas gametos*

Answer: A



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34. A student collected an alga and found that its cells contain both chl a and chl d as well as phycoerythrin but no chl b and flagella. The alga belongs to

1. Rhodophyceae
2. Phaeophyceae

3. Bacillariophyceae

4. Chlorophyceae

A. Rhodophyceae

B. Phaeophyceae

C. Bacillariophyceae

D. Chlorophyceae

Answer: A



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35. Allophycocyanin is found in

1. Chlorophyceae

2. Rhodophyceae

3. Both 1 and 2

4. All marine algae

A. Chlorophyceae

B. Rhodophyceae

C. Both 1 and 2

D. All marine algae

Answer: B



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36. The algal forms are mostly marine in

1. Chlorophyceae

2. Phaeophyceae

3. Ascomycetes

4. All of these

A. Chlorophyceae

B. Phaeophyceae

C. Ascomycetes

D. All of these

Answer: B



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37. Algae and fungi are characterised by the possession of

- A. 1.mitospores
- B. 2.chloroplast
- C. 3.multicellular jacketed sex organs
- D. 4.unicellular jacketed sex organs

Answer: A



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38. What is common in Thallphytes, Bryophytes and pteridophytes?

- A. Dependence on water
- B. Presence of conductive system

C. Presence of cones

D. Absence of vascular tissue.

Answer: A



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39. Most of the green algae are

A. fresh water

B. marine

C. terrestrial

D. epiphytic/Epizoic

Answer: A



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40. Chlorophyll common between phaeophyceae and bacillariophyceae but absent in rhodophyceae is

- A. chlorophyll a
- B. chlorophyll b
- C. chlorophyll c
- D. chlorophyll e

Answer: C



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41. The pigment found only in some algae

A. chlorophyll a

B. xanthophyll

C. carotene

D. phycobilins

Answer: D



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42. The structure in algae helping in perennation to tide over drought are

- A. zoospores, hypnospores and aplanospores
- B. zoospores, akinetes, zygospores
- C. aplanospores, hypnospores and zygospores.
- D. none of the above

Answer: C



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43. A single thylakoid per granum is found in the chloroplast of

- A. red algae
- B. green algae

C. brown algae

D. yellow algae

Answer: A



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44. The evolutionary sequence is

A. Thallophyta-Bryophyta-Pteridophyta -Phanerogams

B. Protophyta-Phanerogams-Crypto-gams-Monocots

C. Archegoniatae-Embryophyte

D. Archegoniatae-Embryophyte-Phan-erogams-

Monocots

Answer: A



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45. Sexual reproduction where a smaller and motile male gamete fuses with larger and motile female gamete known as

- A. isogamy
- B. anisogamy
- C. oogamy
- D. heterogamy

Answer: B





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46. Life cycle in Chlamydomonas / Ulothrix/ Spirogya is

- A. haplontic
- B. haplobiontic
- C. diplontic
- D. diplobiontic

Answer: A



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47. Shape of Spirogyra chloroplast is

A. scalariform conjugation

B. lateral conjugation

C. direct conjugation

D. parthenogenesis

Answer: A



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48. Which is known as Pond Scum/mermaids tresses?

A. Ulothrix

B. Nostoc

C. Spirogyra

D. Anabaena

Answer: C



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49. The gametangia and sporangia of Ulothrix are

- A. jacketed and multicellular
- B. jacketed and unicellular
- C. nonjacketed and multicellular
- D. non-jacketed and unicellular

Answer: D



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50. Alginic acid is present in the cell wall of

- A. bacillariophyceae
- B. Euglena
- C. Laminaria
- D. Diatoms

Answer: C



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51. In phaeophyceae, thylakoids are found in group os

A. 3's

B. 4's

C. 5's

D. 6's

Answer: A



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52. Match the following

``{:(("Phaeophyceae","fucin"),("Cyanophyceae","r-
phycoerythrin"),("Rhodophyceae","c-phycocyanin"),
("Diatoms","Chrysolaminarin")}:`

A. 1-A,2-B,3-C,4-D

B. 1-A,2-C,3-B,4-D

C. 1-C,2-B,3-A,4-D

D. 1-B,2-A,3-D,4-C

Answer: B



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53. Plants lacking seed and vascular tissue but forming spores and embryo are

A. bryophytes

B. pteridophytes

C. angiosperms

D. gymnosperms

Answer: A



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54. Bryophytes grow in moist, humid places as

- A. they have no cuticle
- B. require water for fertilization
- C. they do not have roots
- D. all of the above

Answer: D



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55. Bryophytes don't attain much height because

- A. they do not have vascular supply
- B. they do not have roots and mechanical tissue
- C. they require water for transport of sperms
- D. all of the above.

Answer: D



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56. Bryophytes can be distinguished from algae/fungi/thallophytes because they have

A. thallus,haploid ,gametophytic body

B. chloroplast

C. no conducting tissue

D. sterile jacket of cells around multicellular sex organs.

Answer: D



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57. Bryophytes show

A. 1.asexual reproduction & zygotic meiosis

B. 2.asexual reproduction & sporic meiosis

C. 3.no asexual reproduction but sporic meiosis

D. 4.gametophytic dominance and sporic meiosis

Answer: D



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58. Rhizoids differ from roots as

A. rhizoids are always unicellular but roots are multicellular

B. rhizoids arise in gametophytes but roots in sporophytes

C. roots are branched but rhizoids are always unbranched.

D. all of the above.

Answer: B



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59. Predominant and largest gametophyte is of

1. Selaginella
2. Pinus
3. Moss
4. Rice

A. Selaginella

B. Pinus

C. Moss

D. Rice

Answer: C



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60. Which one of the following is true moss

1. Cord moss

2. Club moss

3. Irish moss

4. All of the above.

A. Cord moss

B. Club moss

C. Irish moss

D. All of the above.

Answer: A



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61. The spores produced in capsule in moss, germinate to form haploid structure called

1. leafy gametophyte

2. protonema

3. prothallus

4. peristome

A. leafy gametophyte

B. protonema

C. prothallus

D. peristome

Answer: B



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62. Sex organ of Funaria are

A. projected and sessile

B. projected and stalked

C. embedded and stalked

D. embedded and sessile

Answer: B



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63. Funaria is included in bryophytes because

A. it is rootless

B. it is without vascular supply

C. its sporophyte is parasite and attached to gametophyte

D. it grows near water.

Answer: C



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64. Sporophyte of Funaria is

- A. Parasite on gametophyte as it is non green
- B. semiparasite on gametophyte as it is green
- C. independent of gametophyte as it is green
- D. none of the above

Answer: B



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65. Archegonium of Funaria secretes mucilage rich in

A. sucrose

B. glucose

C. malic acid

D. citric acid

Answer: A



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66. Polytrichum has

A. heart shaped prothallus

B. foot, seta and capsule

C. vascular bundles

D. mitospores

Answer: B



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67. The sporophyte of Funaria begins development within

- A. 1.antheridium
- B. 2.archegonium
- C. 3.capsule
- D. 4.protonema

Answer: B



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68. Bryophytes show

- A. oogamous
- B. isogamous
- C. anisogamous
- D. hologamy

Answer: A



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69. Bryophytes called amphibians of plant king-dom as

- A. they inhabits damp places
- B. they have tracheids
- C. their sex organs are multicellular and jacketed
- D. their reproductive phase requires water.

Answer: D



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70. Bryophytes differ from pteridophytes in

- A. having mitospores
- B. the absence of vascular tissue system
- C. lacking embryo stage

D. all of the stage

Answer: B



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71. Match List I with List II and pick up the correct choice from the under assigned codes

List I

- | | |
|-----------------|------------------|
| (a) Thallophyta | (c) Bryophyta |
| (b) Embryophyta | (d) Tracheophyta |

List II

- (I) Embryophyta excluding Tracheophyta
- (II) Bryophyta and Tracheophyta
- (III) Phycophyta and Mycophyta
- (IV) Bryophyta and Pteridophyta
- (V) Pteridophyta and Spermatophyta

A.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
<i>IV</i>	<i>II</i>	<i>V</i>	<i>I</i>

- B. $\begin{array}{cccc} a & b & c & d \\ III & II & I & V \end{array}$
- C. $\begin{array}{cccc} a & b & c & d \\ IV & II & I & III \end{array}$
- D. $\begin{array}{cccc} a & b & c & d \\ III & IV & I & V \end{array}$

Answer: B



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72. A liver wort is

- A. a parasite causing infection of liver
- B. a kind of virus infecting the liver
- C. a flowering plant for treating liver disorders

D. a plant without differentiation into roots, stem and leaves.

Answer: D



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73. Branched rhizoids and leafy gametophytes are characteristics of

1. all bryophytes
2. some bryophytes like mosses
3. algae
4. liverworts

A. all bryophytes

B. some bryophytes like mosses

C. algae

D. liverworts.

Answer: B



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74. In the life cycle of *Funaria*, spores are beginning of the generation

1. gametophyte

2. sporophyte

3. peristome

4. both 1 and 2

A. gametophyte

B. sporophyte

C. peristome

D. both 1 and 2

Answer: A



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75. Sphagnum is also called 'Peat Moss' because it

1. it grown in acidic marshes (bogs) and helps in peat formation
2. it is found in peat

3. it retains water

4. it is fossilized quickly

A. it grown in acidic marshes (bogs) and helps in peat formation

B. it is found in peat

C. it retains water

D. it is fossilized quickly.

Answer: A



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76. Moss plant is a

A. gametophyte

B. sporophyte

C. sometimes gametophyte and sometimes sporophyte

D. predominantly gametophyte with sporophyte attached to it.

Answer: D



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77. Bryophytes are close to pteridophytes in having

A. multicellular jacketed sex organs

B. flagellated oosphere

C. mitospores in life cycle

D. all of the above

Answer: A



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78. To which would you assign a plant that has xylem and phloem, produces meiospores, embryo but lacks seeds and flowers?

A. Bryophytes

B. Pteridophytes

C. Tracheophytes

D. Spermatophytes.

Answer: B



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79. Vascular cryptogams and botanical snakes of plant kingdom are

A. pteridophytes

B. tracheophytes

C. angiosperms

D. spermatophytes

Answer: A



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80. Tracheophyte include

A. bryophytes, pteridophytes and spermatophytes

B. bryophytes, pteridophytes, gymnosperms and
angiosperms

C. pteridophytes and spermatophytes (gymnosperms
and monocotyledons)

D. pteridophytes and spermatophytes (gymnosperms
and angiosperms)

Answer: D



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81. Gametophytic and sporophytic phases are independent in

- A. bryophyte
- B. pteridophyte
- C. gymnosperms
- D. all of the above.

Answer: B



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82. Which one of the following is considered important in the development of seed habit

Or

Selaginella has the character of evolutionary importance.

That character is

A. seed habit and heterosporous nature

B. vivipar

C. rhizophore

D. spikes.

Answer: A



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83. Heterosporous pteridophytes produce

- A. dioecious gametophytes
- B. monoecious gametophytes
- C. homothallic gametophytes
- D. hermaphrodite gametophytes

Answer: A



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84. Rhizophore in Selaginella is

- 1. root
- 2. stem

3. leaf

4. organ sui generis

A. root stem

B. leaf

C. organ sui generis

D.

Answer: D



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85. Adiantum, Pteris/ferns are

1. heterosporous

2. homosporous

3. homogametic

4. isomerous

A. heterosporous

B. homosporous

C. homogametic

D. isomerous

Answer: B



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86. The main plant body/dominant plant in life cycle of a fern/Pteridophytes is

A. gametophyte (x)

B. sporophyte (2x)

C. apogamous

D. aposporous

Answer: B



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87. Stem in ferns is underground, monopodial root stock and called

A. rhizome

B. corm

C. bulb

D. sucker

Answer: A



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88. The leaves of fern plants are called

A. fronds with reticulate venation

B. haploid

C. pinnately compound and grow by apical meristem

D. all of the above.

Answer: C



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89. Young fern leaves and rhizome are protected by :-

A. fronds with reticulate venation

B. leaf bases

C. ramenta

D. root stock

Answer: C



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90. Maiden Hair Fern is

A. 1.Adiantum

B. 2.Cheilanthis

C. 3.Pteris

D. 4.Dryopteris

Answer: A



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91. Sporangia bearing leaves in Pteridophytes are called

A. 1.sporophylls

B. 2.megaphylls

C. 3.fronds

D. 4.sorus

Answer: A



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92. Fern sperms (antherozoids) are

- A. multiciliated or multi flagellated and spirally coiled
- B. biciliated and coiled
- C. uninucleated and unflagellated
- D. multiciliated sickle shaped

Answer: A



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93. What represents the gametophytic generation in pteridophytes?

- A. Main plant body
- B. Heart shaped prothallus
- C. Indusium
- D. Stomium

Answer: B



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94. A collection of sporangia attached to placenta and covered over by indusium is known as

- A. sorus
- B. sporophyll
- C. ramenta
- D. spike

Answer: A



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95. Archegonium of Funaria secretes mucilage rich in

A. sucrose

B. malic acid

C. glucose

D. citric acid

Answer: B



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96. A thick , multicellular covering called indusium in ferns over sori is meant for

A. protection

B. producing spores

C. help in dispersal

D. has no role

Answer: A



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97. Antheridium in ferns is

A. multicellular and jacketed

B. stalked, hemispherical and borne ventrally in posterior part between rhizoids

C. its jacket has 32-48 cells

D. all of the above.

Answer: A



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98. Life cycle in ferns is

- A. haplontic
- B. diplohaplontic
- C. haplo-haplontic
- D. diplobiontic

Answer: B



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99. First land plant was represented by

- A. Ferns
- B. Grasses
- C. Gymnosperms
- D. Algae.

Answer: A



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100. Spike moss is

- A. Selaginella

B. Funaria

C. Lycopodium

D. Adiantum

Answer: A



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101. Ferns are characterised by

A. cambium

B. xylem vessels

C. young leaves with circinate ptyxis and presence of
ramenta

D. all of the above.

Answer: C



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102. Ferns resemble with mosses in one respect

- A. 1.both are embryophytes
- B. 2.both are tracheophytes
- C. 3.both are sporophytes
- D. 4.both are aquatic

Answer: A



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103. Heteromorphic alternation of generation is found in

- A. Spirogyra
- B. Mucor
- C. Selaginella
- D. All of these.

Answer: C



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104. In ferns, circinate ptyxis (vernation) is defined as

- A. arrangement of leaf gaps in stems
- B. coiling of young leaves
- C. arrangement of sori on leaves
- D. attachment oframenta on young parts.

Answer: B



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105. If sperms of moss and fern are put together near the archegonium of fern, only the sperms of fern find entry into archegonium, the reason being that

- A. sperms of moss are killed by larger sperms of fern

B. archegonia of fern secrete a toxin to kill moss of fern.

C. archegonia of fern secrete mucilage rich in malic acid to attract sperms of fern only

D. sperms of moss are less motile and find difficulty in entering archegonium.

Answer: C



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106. What may be the possible advantage occurring out of the presence of antheridia and archegonia on the underside of a fern prothallus?

- A. They are protected from direct rays of the sun.
- B. Capillary water accumulates on the underside of prothallus between its lower surface and the soil surface sex organs projecting in this water can be readily fertilised by the ciliated sperms which are chemotactically attracted by the archegonia
- C. The sex organs remain protected from wind
- D. Nutrients manufactured by the green prothallus can readily seep downwards to the sex organs due to the action of gravity.

Answer: B



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107. Walking fern is named so as

A. 1.it knows walking

B. 2.it is dispersed through walking of animals in forests

C. 3.its spores are able to move with wind

D. 4.it spreads and propagates vegetatively by its leaf tips.

Answer: D



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108. A water fern capable of fixing atmospheric nitrogen and used as biofertilizer.

- A. 1.Azolla
- B. 2.Nostoc
- C. 3.Adiantum
- D. 4.Spirulina

Answer: A



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109. Which group of gymnosperms is close to angiosperms?

A. Gnetales

B. Ginkgoales

C. Cycadales

D. Coniferales

Answer: A



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110. Gymnosperms are different from angiosperms in

A. 1.absence of seeds

B. 2.absence of ovary

C. 3.absence of ovule

D. 4.absence of sieve cells.

Answer: B



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111. Which one constitutes the dominant vegetation in colder regions?

A. Dicots

B. Gymnosperms

C. Monocots

D. legumes

Answer: B



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112. Which one of the following has not changed for the last several thousand years

- A. *Pinus excelsa*
- B. *Ginkgo biloba*
- C. *Welwitschia*
- D. *Sequola*

Answer: B



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113. Largest ovules, largest male and female gametes and tallest trees are found among

- A. 1.angiosperms
- B. 2.tree ferns and some monocots
- C. 3.gymnosperms
- D. 4.dicots

Answer: C



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114. Siphonogamy in traceophytes

A. eliminates dependence on water

B. brings pollen grains together

C. carries spores

D. protects embryo

Answer: A



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115. Cycas is a

A. living fossil

B. fossil

C. endangered species

D. exotic species.

Answer: A



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116. The cortex and pith of stem *Cycas* serves as a source of 'Sago' which is a

A. proteins

B. cellulose

C. starch

D. mixture of starch and protein.

Answer: C



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117. Cycas has the largest

A. ovule

B. egg

C. sperm

D. all of the above.

Answer: C



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118. Cycas is

A. 1.hermaphrodite

B. 2.dioecious

C. 3.monoecious

D. 4.none of these

Answer: B



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119. Organised female cone is absent in

A. 1.Ephedra

B. 2.Pinus

C. 3.Cycas

D. 4.None of these

Answer: C



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120. Cycas differs from Pteris in having

A. 1.vessels and tracheids

B. 2.motile sperms

C. 3.pollen tube

D. 4.archegonia

Answer: B



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121. Coralloid roots of *Cycas* are useful in

- A. absorption of water
- B. fixation
- C. absorption and fixation of nitrogen
- D. respiration from air.

Answer: C



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122. Coralloid roots of *Cycas* possess a symbiotic alga

A. Aulosira

B. Anabaena

C. Oscillatoria

D. Chlorella

Answer: B



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123. Phloem of gymnosperms differ from angiosperms in

A. having no companion cells

B. having no sieve cells

C. having phloem fibre

D. having phloem parenchyma

Answer: A



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124. Foliage leaves (needles) in Pinus are borne by

- A. dwarf shoots
- B. long shoots
- C. both 1 and 2
- D. female strobilus

Answer: A



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125. At the time of dehiscence winged pollen grain of Pinus is

- A. 1)1 celled
- B. 2)4 celled
- C. 3)3 celled
- D. 4)2 celled

Answer: B



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126. Simplest and highly reduced archegonium is found in

A. 1.Pinus

B. 2.Fern

C. 3.Bryophytes

D. 4.Liver worts/mosses

Answer: A



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127. Microsporangia of *Cycas* occur over microsporophyll

A. abaxial

B. adaxial

C. lateral

D. margin.

Answer: A



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128. Number of generations present in Pinus seed are

A. 2

B. 3

C. 1

D. 4

Answer: B



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129. Ploidy in wing of pollen grain and wing of seed of *Pinus* is

- A. x in pollen grain and $2x$ in seed
- B. $2x$ in pollens and $2x$ in seed
- C. being an outgrowth, chromosomes are absent
- D. $1/2 x$ in wing of pollens and polyploidy in seed.

Answer: A



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130. The phenomenon of sulphur shower in pine forest is due to

- A. dispersal of winged pollens of Pinus
- B. dispersal of winged seeds of Pinus
- C. bursting of third year female cone of Pinus
- D. none of the above

Answer: A



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131. Which is homologous?

- A. Leaves of Moss and Selaginella
- B. Roots of ferns and moss
- C. Endosperm of Pinus and prothallus of Adiantum
- D. Pinus endosperm & endosperm of Maize

Answer: C



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132. In pinus

- A. seeds and ovules are winged
- B. endosperm is triploid
- C. fruits and flowers absent and seeds are naked

D. all of the above

Answer: C



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133. Chilgoza' is a fruit, obtained from a gymnosperm which is

A. *Pinus Roxburghii*

B. *Pinus geradiana*

C. *Cycas revoluta*

D. *Abies balsamiana*

Answer: B



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134. Ephedrine obtained from the stem of Ephedra is given to cure

- A. gastric disorders
- B. respiratory disorders
- C. arthritis
- D. all of the above.

Answer: B



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135. No Gymnosperms is

- A. 1.annual and herbaceous
- B. 2.perennial and herbaceous
- C. 3.xerophyte and woody
- D. 4.tree and shrubby

Answer: A



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136. Vessels are absent in the xylem of

- A. angiosperms

B. monocots

C. gymnosperms excluding gnetales

D. pteridophytes excluding ferns.

Answer: C



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137. One of the main evolutionary features of the alternation of generations from algae to flowering plants is.

A. gradual elaboration of gametophyte

B. gradual elaboration of sporophyte

C. elination of sporophytic tissue

D. elimination of gametophyte.

Answer: B



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138. In which of the following the angiosperms resemble the Gymnosperms

A. nature of endosperm

B. presence of vessels

C. siphonogamy

D. double fertilization.

Answer: C



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139. In gymnosperms and angiosperms the pollen tube carries the male gamete to the site of fertilization and thus does not require water for fertilization. It is referred as

A. porogamy

B. siphonogamy

C. mesogamy

D. syngamy.

Answer: B



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140. which one of the following statements is correct?

- A. 1.Vascular cryptogams are all heterosporous
- B. 2.vascular cryptogams are all homosporous
- C. 3.Archegoniates are all homosporous
- D. 4.Spermatophytes are all heterosporous.

Answer: D



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141. Cycas has 2 cotyledons yet it is classified as Gymnosperm and not as dicot plant because

- A. 1.it resembles date palm/monocot in appearance.
- B. 2.it has compound leaves
- C. 3.its ovules are naked
- D. 4.it bears megasporophylls

Answer: C



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142. In Cycas pollen grains shed at

- a. 2 celled stage

b. 3 celled stage

c. 4 celled stage

d. 5 celled stage

A. 2 celled stage

B. 3 celled stage

C. 4 celled stage

D. 5 celled stage

Answer: B



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143. What is true for Cycas?

- A. 1.Cycas is dioecious
- B. 2.Ovules without integument
- C. 3.Largest female cone
- D. 4.All of the above.

Answer: A



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144. Which is incorrect about Cycas

- A. 1.Its xylem has vessels
- B. 2.Its young leaves show circinate vernation
- C. 3.It does not have organised female flower

D. 4.motile sperms

Answer: A



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145. Cycas reproduces vegetatively by

a. sporophyllis

b. bulbils

c. fragmentation

d. rhizome

A. sporophyllis

B. bulbils

C. fragmentation

D. rhizome

Answer: B



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146. Which one is common between Funaria and Pinus?

1. No fruits are produced
2. No seeds are produced
3. Pollen tube is formed
4. Antheridia and archegonia are present

A. No fruits are produced

B. No seeds are produced

C. Pollen tube is formed

D. Antheridia and archegonia are present

Answer: A



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147. Among the following, which does not belong to sporophyte generation in *Pinus*?

1. Long shoot
2. Dwarf shoot
3. roots are branched but rhizoids are always unbranched
4. Endosperm

A. Long shoot

B. Dwarf shoot

C. roots are branched but rhizoids are always unbranched.

D. Endosperm

Answer: D



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148. Needle in Pinus represents

A. root

B. scale leaf

C. foliage leaf

D. spur

Answer: C



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149. The male cone of *Pinus* is formed of

Or

In *pinus* male cone bears is large number of

- A. antheridia
- B. megasporophylls/green
- C. microsporophylls
- D. ligules

Answer: C





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150. Seeds of Pinus are

- A. adaxial, endospermic and polycotyledonous
- B. abaxial, monocotyledonous and endospermic
- C. hypogeal, endospermic and monocot
- D. monocotyledonous, epigeal.

Answer: A



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151. Which of the following is not a correct match?

A. Maiden hair fern: Ginkgo

B. Bog Moss : Sphagnum

C. Cord/green moss: Funaria

D. Walking fern : Adiantum

Answer: A



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152. Following are are given some trends in the evolution of plants

A. origin of vascular system

B. origin of rhizoids

C. origin of seeds

D. origin of flowers.

Answer: C



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153. Characteristic of Angiosperms which distinguish them from gymnosperms

A. presence of fruits and flowers

B. double fertilization and triploid endosperm formed after double fertilization

C. companion cells in phloem and vessels in xylem

D. all of the above.

Answer: D



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154. Beginning with germination of a moss spore, what is the sequence of structures that develop after germination?

I. embryo II. Gametes III. Sporophyte IV. Potonema V. gametophore

A. IV,V,III,I,II

B. V,IV,III,II,I

C. III,IV,V,II,I

D. IV,V,II,I,III

Answer: D



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155. In which of the following the angiosperms resemble the Gymnosperms

- A. presence of companion cells
- B. type of fertilization
- C. presence of ovules
- D. nature of endosperm

Answer: C



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156. An example of a marine angiosperm thriving in shallow seas is

A. *Zostera*

B. *Wolffia*

C. *Pistia*

D. *Rhizophora*

Answer: A



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157. Evolutionary important character of *Selaginella* is

- A. Haplontic life cycle
- B. Free-living gametophyte
- C. Dependent sporophyte
- D. Heterospory

Answer: D



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158. Which of the following is grouped under phanerogams?

A. Algae show embryo stage

B. Bryophytes

C. Gymnosperms

D. Pteridophytes

Answer: C



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159. The stamen in angiosperms is homologous to which part in gymnosperm and pteridophytes?

A. Microsporangium

B. Micorosporophyll

C. Megasporophyll

D. Male gametophyte

Answer: B



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160. The megasporophyll of vascular plants is analogous to which structure in angiosperms

A. stamen

B. ovule

C. carpel

D. leaf

Answer: C



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161. To which group of plants does the Banyan tree belong

A. angiosperms

B. Gymnosperms

C. cryptogams

D. phaeophyta

Answer: A



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162. Mark the national tree

- A. *Mangifera indica* (Mango tree)
- B. *Ficus benghalensis* (banyan tree)
- C. *Ficus religiosa* (pipal tree)
- D. *Azadirachta indica* (Neem tree)

Answer: B



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163. Of the four widely known systems of classification one remains less phylogenetic and more natural, which is

of

A. Engler & Prantl

B. Benth & Hooker

C. Rendle

D. Hutchinson

Answer: B



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164. The book *Genera plantarum* was written by

A. Benth and Hooker

B. Hutchinson

C. Rendle

D. Engler and Prantl

Answer: A



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165. Dryopteris differs from Funaria in having

A. an independent gametophyte

B. an independent sporophyte

C. swimming antherozoids

D. archegonia

Answer: B



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166. Angiosperms have dominated the land flora primarily by their

- A. nature of self pollination
- B. property of producing large number of seeds
- C. domestication by man
- D. power of adaptability in diverse habitat.

Answer: D



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167. In which of the following group, all the organisms are homosporous

A. Funaria,Salvinia,Dryopteris

B. Azolla,Selaginella,salvinia

C. Salvinia,Cedrus,Funaria

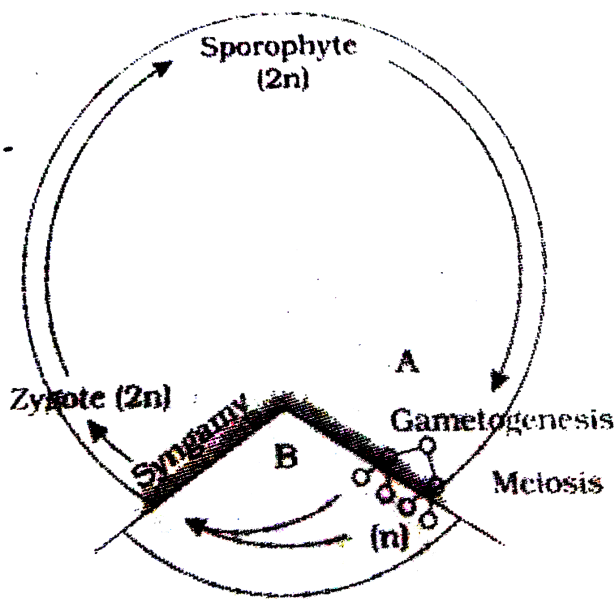
D. lycopodium, equisetum, phylloglossum

Answer: D



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168. See the given life cycle pattern and choose the option which it correctly represents.



- A. Haplontic
- B. Diplontic
- C. Haplo-diplontic
- D. 1 or 3

Answer: B



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169. Read the following statements carefully

(i) Protonema is found in mosses and is absent in liverworts.

(ii) In Marchantia, the sporophyte is divided into the foot, seta and capsule

(iii) Archegonia are partially embedded in pteridophytes

(iv) Gymnosperms do not possess vessels in xylem except in some gnetophytes.

A. i,ii,iii

B. ii,iv

C. i,iii,iv

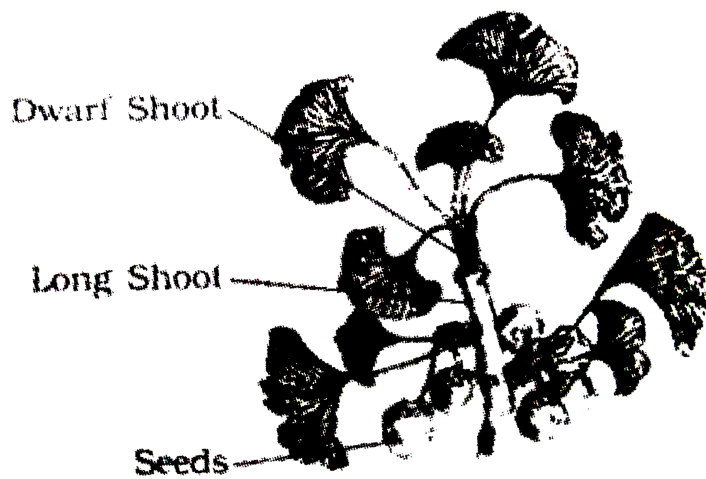
D. All are correct.

Answer: C



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170. Find the correct match which identifies these diagrams



(A)

Antherial branch

Branches

Archegonial branch

(B)

Branches

Axis

(C)

(D)

- A. *Chara* *Sphagnum* *Salvinia* *Ginkgo*

- | | | | | |
|----|----------|----------|----------|----------|
| | <i>A</i> | <i>B</i> | <i>C</i> | <i>D</i> |
| B. | Ginkgo | Chara | Sphagnum | Salvinia |
-
- | | | | | |
|----|----------|----------|----------|----------|
| | <i>A</i> | <i>B</i> | <i>C</i> | <i>D</i> |
| C. | Sphagnum | Ginkgo | Chara | Salvinia |
-
- | | | | | |
|----|----------|----------|----------|----------|
| | <i>A</i> | <i>B</i> | <i>C</i> | <i>D</i> |
| D. | Ginkgo | Sphagnum | Salvinia | Chara |

Answer: D



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171. The algal group which most biologists believe to have led to evolution of land plants is

- A. phaeophyta
- B. Rhodophyta
- C. Chlorophyta

D. Chrysophyta

Answer: C



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172. Phycocolloids are found in the cell walls of

A. Diatoms

B. Spirogyra

C. Red and brown algae

D. All algae

Answer: C



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173. Which one of the following is not characteristic of all divisions of vascular plants?

- A. An alternation of generations
- B. The development of seeds
- C. Differentiation into roots, stems and leaves
- D. Xylem and phloem for transporting materials between roots and leaves.

Answer: B



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174. Red algae differs from green and brown algae in

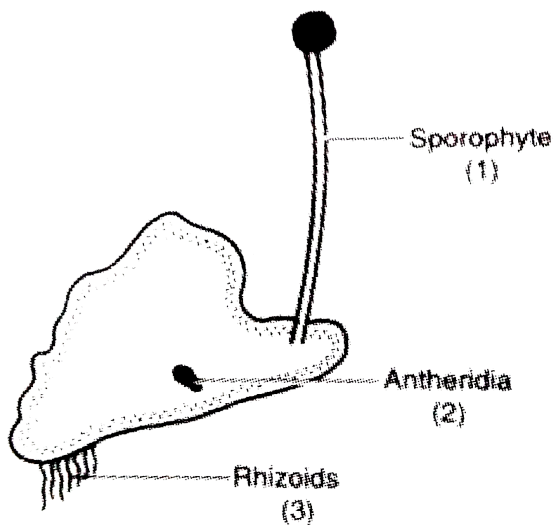
- A. No chlorophyll a
- B. No differentiated cells
- C. No phycocyanin within their cells
- D. No flagellated stages in their life cycles

Answer: D



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175. Given is a picture of bryophyte. The correct ploidy levels of the indicated structures are



A. 1) $2n$, 2: n , 3: n

B. 2) $1:n$, 2: n , 3: n

C. 3) $1:2n$, 2: $2n$, 3: $2n$

D. 4) $1:2n$, 2: n , 3: $2n$

Answer: A



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176. Bryophytes resemble algae in the following aspects -

A. Differentiation of the plant body into root, stem and heterotrophic mode of nutrition

B. Thallus-like plant body, lack of vascular tissue: absence of root: and autotrophic mode of nutrition

C. Thallus-like plant body, presence of roots, and autotrophic mode of nutrition

D. Filamentous body: presence of vascular tissue: and autotrophic mode of nutrition

Answer: B



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177. Funaria differs from Pteridium in the absence of

- A. Root
- B. Seed
- C. Archegonia
- D. Embryo

Answer: A



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178. Prothallus is

A. Gametophyte,monoecious,autotroph present in
pteridophytes

B. Gametophyte,monoecious,autotroph found in
bryophytes

C. Sporophyte,dioecious,heterotroph found in
bryophytes

D. Gametophyte,dioecious,heterotroph present in
pteridophytes

Answer: A



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179. In gymnosperms how many male gametes are produced by each pollen grain

A. 4

B. 3

C. 2

D. 1

Answer: C



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180. Which arrangements of the organisms represents a rank ordering (based on size/importance) from dominant

gametophyte on the left to dominant sporophyte on the right?

- A. Polytrichum, Cycas, Equisetum
- B. Lycopodium, Zostera, Riccia
- C. Sphagnum, Pteridium, Cedrus
- D. Pinus, Selaginella, Marchantia

Answer: C



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181. Red algae do not have

- A. zoospores, hypnospores and aplanospores

- B. Cellulose in cell wall
- C. Floridean starch
- D. Sexual reproduction.

Answer: A



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182. Select the wrong statement

- A. Gymnosperm do not have antheridia
- B. Cycas and ferns have multiflagellate gametes
- C. Selaginella is a heterosporous non seed plant
- D. Pinus tree is dioecious

Answer: D



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183. Ovule of Pinus can be called

- A. Female gametophyte
- B. Male gametophyte
- C. Megasporangium
- D. Integumented megasoporangium

Answer: D



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184. Conifers differ from grasses in the

- A. Production of seeds from ovules
- B. Lack of xylem tracheids
- C. Absence of pollen tubes
- D. Formation of endosperm before fertilization.

Answer: D



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185. "Ordines Anomali" of Benth and Hooker includes

- A. Seed plants showing abnormal forms of growth and development
- B. Plants represented only in fossil state.
- C. Plants described in the literature but which Bentham and Hooker did not see in original
- D. A few orders which could not be placed satisfactorily in the classification.

Answer: D



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186. Which of the following is a wrong combination?

A. Haploid endosperm, archegonia present but antheridium absent-Gymnosperms

B. Triploid endosperm and 7-celled female gametophyte called embryo sac-Angiosperms

C. Embryo stage absent, reproduction by mitospores-Algae

D. Gametophyte independent, biflagellate gametes and reproduction by accessory spores-Mosses.

Answer: D



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187. Green algae are also included among the items carried by astronauts in a space ship Which of the following are the reasons for this?

1. These being very simple plants, are amenable to a variety of experiments. 2. These may provide nourishment to the persons on the space ship. 3. These act as a source of oxygen.

Select the correct answer using the codes given below.

A. 1,2 and 3

B. 1 and 3

C. 1 and 2

D. 2 and 3

Answer: A



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188. Consider the following pigments 1. Chlorophyll a 2. Chlorophyll b 3. Chlorophyll c 4. Carotenes 5. Biliproteins 6. Xanthophylls

The characteristic photosynthetic pigments present in Chlorophyceae would include

A. 1,2,3 and 4

B. 1,3,4, and 5

C. 2,3,5 and 6

D. 1,2,4 and 6

Answer: D



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189. Which one of the following pairs is not correctly matched?

A. Red Sea: *Trichodesmium erythreum* a cyanobacterium

B. Red Tides: *Rhodomenia*, a red algae

C. Red Snow: *Chlamydomonas nivalis*, a green algae

D. Red Rust of Tea: *Cephaleuros virescens*, a green algae

Answer: B



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190. Consider the following statements

1. In pteridophytes, the phloem lacks companion cells.
2. The xylem lacks vessels in majority of pteridophytes.
3. Heterosporous pteridophytes have monoecious gametophytes.
4. Water is essential for fertilization in pteridophytes.

Which of these statements are correct?

A. 1,2,3 and 4

B. 2,3 and 4

C. 1 and 3

D. 1,2 and 4

Answer: D



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191. Which one of the following statements is correct?

A. Leaves of conifers are perennial

B. All vascular plants have Sieve Tube Members

C. The red and edible flesh of strawberry is the carpel
tissue

D. Conifers have motile gametes.

Answer: A



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192. In pinus

- A. Megaspore, endosperm and pollen
- B. Microspore, megaspore and endosperm
- C. Megaspore, integument and root
- D. Microspore, leaf and endosperm

Answer: B



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193. Read the following statements carefully

(i) Protonema is found in mosses and is absent in liverworts.

(ii) In Marchantia, the sporophyte is divided into the foot, seta and capsule

(iii) Archegonia are partially embedded in pteridophytes

(iv) Gymnosperms do not possess vessels in xylem except in some gnetophytes.

A. 1 and 2

B. 3 and 4

C. 1, 2 and 3

D. 2 and 3

Answer: A



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194. Consider the following statemetns

1. The thylakoids of blue-green algae are arranged singly in the stroma of chloroplasts. 2. In blue-green algae, the thylkoids are not only the sites for photosynthesis but also for respiration

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. both 1 and 2

D. Neither 1 nor 2

Answer: B



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195. In gymnosperms the pollen chamber represents

- A. A cavity in the ovule in which pollen grains are stored after pollination
- B. An opening in the megagametophyte through which the pollen tube approaches the egg
- C. The microsporangium in which pollen grains develop

D. A cell in the pollen grain in which the sperms are formed.

Answer: A



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196. Bryophytes can be compared with amphibians since both are

(i) Autotrophic (ii) Dependent on water for reproduction
(iii) Without endoskeleton (iv) Devoid of impervious body surface (v) With separate sexes

A. ii,iv

B. i,ii,iv

C. ii,iii,iv

D. i,iii,iv

Answer: A



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197. In which of the following groups all the organisms contain chlorophyll c

A. Ectocarpus, Fucus, Sargassum, Laminaria

B. Macrocystis, Batrachospermum, Polysiphonia, Characium

C. Chlamydomonas, Asterocystis, Ulothrix, Gelidium

D. Harveyella, Chondrus, Volvox, Chlorella

Answer: A



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198. In which of the following group all the organisms contain phycobilins?

- A. 1. Anabaena, Gelidium, Nereocystis, Zoochlorella
- B. 2. Nostoc, Porphyra, Chondrus, Batrachospermum
- C. 3. Oscillatoria, Sargassum, Volvox, Fucus
- D. 4. None of the above.

Answer: B



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199. In which of the following groups all the organisms lack motile stages in the life cycle?

1. Chlamydomonas, Ulothrix, Sargassum
2. Chondrus, Gelidium, Batrachospermum
3. Chlorella, Polysiphonia, Volvox
4. All of the above

- A. Chlamydomonas, Ulothrix, Sargassum
- B. Chondrus, Gelidium, Batrachospermum
- C. Chlorella, Polysiphonia, Volvox
- D. All of the above

Answer: B



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200. Go through the following statements

(i) In chlorophyceae the flagella are 2 in number, unequal in size and lateral in position

(ii) In phaeophyceae flagella are 2-8 in number, equal in size and apical in position (iii) Chlorella and Spirulina are rich in proteins and are used as food supplements even by space travellers. (iv) The leaves in pteridophyta are microphylls as in Selaginella or macrophylls as in ferns.

Which of these are correct

a. i,ii,iii

b. ii,iii

c. i,ii,iv

d. iii,iv

A. i,ii,iii

B. ii,iii

C. i,ii,iv

D. iii,iv

Answer: D



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201. In a moss the sporophyte

1. arises from a spore produced from the gametophyte
2. manufactures food for itself, as well as for the gametophyte

3. is partially parasitic on the gametophyte

4. Produces gametes that give rise to the gametophyte

A. arises from a spore produced from the gametophyte

B. manufactures food for itself, as well as for the gametophyte

C. is partially parasitic on the gametophyte

D. Produces gametes that give rise to the gametophyte

Answer: C



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202. Which of these is mismatched

- A. 1.phaneros-visible
- B. 2.kryptos-concealed
- C. 3.gymno-naked
- D. 4.thallus-diploid

Answer: D



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203. Which of the following is a vascular cryptogam

- A. 1.Marchantia

B. 2.Cedrus

C. 3.Equisetum

D. 4.Ginkgo

Answer: C



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204. Which one of the following plants is monoecious

A. Cycas

B. Papaya

C. Marchantia

D. Pinus

Answer: D



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205. Which one of the following has haplontic life cycle

A. Ustilago

B. Wheat

C. Funaria

D. Polytrichum

Answer: A



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206. Mannitol (sugar alcohol) is the stored food in

- A. Fucus
- B. Gracillaria
- C. Chara
- D. Porphyra

Answer: A



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207. Young leaves of Cycas show

- A. Simple venation

- B. Circinate venation
- C. Alternate arrangement
- D. Opposite arrangement

Answer: B



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208. Algae have cell wall made up of

- A. Cellulose, hemicellulose and pectins
- B. Cellulose, galactans and mannans
- C. Hemicellulose, pectins and proteins
- D. Pectins, cellulose and proteins

Answer: B



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209. Which of the following algal groups has no motile stage

1. Brown

2. Yellow

3. Red

4. Green

A. Brown

B. Yellow

C. Red

D. Green

Answer: C



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210. Spaghnum is an example of

1. Moss
2. Pteridophyte
3. Algae
4. Gymnosperm

A. Moss

B. Pteridophyte

C. Algae

D. Gymnosperm

Answer: A



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211. Consider the following four statements whether they are correct or wrong.

A. The sporophyte in liverworts is more elaborate than that in mosses

B. *Salvinia* is heterosporous

C. The life-cycle in all seed-bearing plants is diplontic

D. In *Pinus* male and female cones are borne on different trees

Answer: B



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212. *Selaginella* and *Salvinia* are considered to represent a significant step toward evolution of seed habit because

A. Female gametophyte is free and gets dispersed like seeds

B. Female gametophyte lacks archegonia

C. Megaspores possess endosperm and embryo
surrounded by seed coat

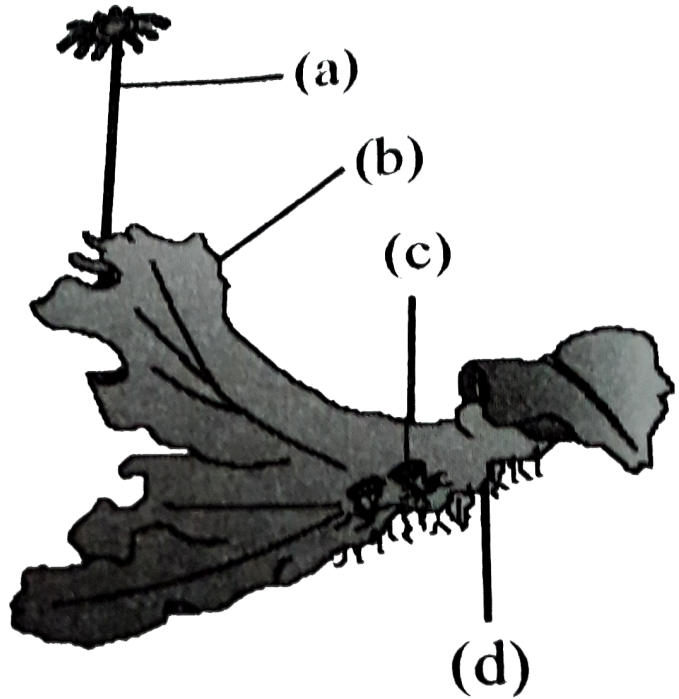
D. Embryo develops in female gametophyte which is
retained on parent sporophyte

Answer: D



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213. Examine the figure given below and select the right
option given all the four parts (a,b,c,d) correctly



identified.

A.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
Archegonia	Female thallus	Gemmacup	Rhizoids

B.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
Archegoniphore	Female thallus	Bud	Foot

C.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
Seta	Sporophyte	Protonema	Rhizoids

D.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
Anteridiophore	Male thallus	Globule	Roots

Answer: A



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214. Archegoniophore is present in

A. 1. Marchantia

B. 2. Chara

C. 3. Adiantum

D. 4. Funaria

Answer: A



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215. Compared with the gametophytes of the bryophytes, the gametophytes of vascular plants tend to be:-

- A. smaller but to have larger sex organs
- B. larger but to have smaller sex organs
- C. larger and to have larger sex organs
- D. smaller and to have smaller sex organs

Answer: D



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216. The gametophyte is not an independent, free-living generation in

A. Polytrichum,Cycas,Equisetum

B. Adiantum

C. Marchantia

D. Pinus

Answer: D



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217. Asexual reproduction in Liverworts takes place by the formation of specialized structures called

A. Gemmae

B. zoospores,akinetes,zygospores

C. Sporangia

D. Microspores

Answer: A



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218. Pinus belongs to the class

A. gnetopsida

B. cycadopsida

C. coniferopsida

D. sphenopsida

Answer: C



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219. Read the following five statements (A-D) and answer as asked next to them

(A) In Equisetum the female gametophyte is retained on the parent sporophyte

(B) In ginkgo male gametophyte is not independent

(C) Sexual reproduction in Volvox is isogamous

(E) The spores of slime moulds lack cell walls

How many of the above statements are correct

A. Four

B. One

C. Two

D. Three

Answer: B



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220. Which one of the following pairs is wrongly matched?

- A. viroids-RNA
- B. Mustard-Synergids
- C. Ginkgo-Archegonia
- D. Salvinia-Prothallus

Answer: D



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221. How many organism in the list given below are autotrophs Lactobacillus, Nostoc, Chara, Nitrosomonas, Nitrobacter, Streptomyces, Saccharomyces, Trypanosoma, Porphyra, Wolfia

A. Six

B. Three

C. Four

D. Five

Answer: A



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222. Cycas and Adiantum resemble each other in having

A. Motile sperms

B. Cambium

C. Vessles

D. Seeds

Answer: A



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223. Which one of the following is common to multicellular fungi, filamentous algae and protonema of

mosses

- A. Members of kingdom plantae
- B. Mode of Nutrition
- C. Multiplication by fragmentation
- D. Diplontic life cycle

Answer: C



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224. Which one of the following is a correct statement

- A. In gymnosperms female gametophyte is free-living

- B. Anteridiophores and archegoniophores are present in pteridophytes
- C. Origin of seed habit can be traced in pteridophytes
- D. Pteridophyte gametophyte has a protonemal and leafy stage.

Answer: C



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225. Sex-organs of pteridophytes are

- A. 1.Multicellular and jacketed
- B. 2.Unicellular and jacketed

C. 3.Unicellular and non jacketed

D. 4.Multicellular and non jacketed

Answer: A



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226. The chloroplasts of algae usually lack

A. Quantasomes

B. Lamellae

C. Pigments reticulum

D. Grana

Answer: D



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227. First amphibian plants of the plant kingdom are

- A. Thallophytes
- B. Bryophytes
- C. pteridophytes
- D. Gymnosperms

Answer: B



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228. The leaves of fern plants are called

A. macrophylls

B. microphylls

C. sporophylls

D. megasporophylls

Answer: A



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229. The tallest tree species of the gymnosperms is

A. Cycas

B. Pinus

C. Sequoia

D. None of the Above

Answer: C



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230. Besides paddy fields, cyanobacteria are also found inside vegetative part of:

A. 1.Equisetum

B. 2.Psilotum

C. 3.Pinus

D. 4.Cycas

Answer: D



231. Select the wrong statement

- A. 1. In Oomycetes female gamete is smaller and motile, while male gamete is larger and non-motile
- B. 2. Chlamydomonas exhibits both isogamy and anisogamy and Fucus shows oogamy
- C. 3. Isogametes are similar in structure, function and behaviour
- D. 4. Anisogametes differ either in structure, function or behaviour.

Answer: A



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232. Which of the following represent maximum number of species among global biodiversity

1. Fungi
2. Mosses and Ferns
3. Algae
4. Lichens

A. Fungi

B. Mosses and Ferns

C. Algae

D. Lichens

Answer: A



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233. Male gametophyte with least number of cells is present in

A. Pinus

B. Pteris

C. Funaria

D. Lilium

Answer: D



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

- A. Spirogyra
- B. Sargassum
- C. Ectocarpus
- D. Ulothrix

Answer: A



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235. An alga which can be employed as food for humna being is

A. polysiphonia

B. Ulothrix

C. Chlorella

D. Spirogyra

Answer: C



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

A. Sphagnum

B. Marchantia

C. Riccia

D. Funaria

Answer: A



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237. In which of the following, gametophyte is not independent in free living ?

A. Marchantia

B. Pteris

C. Pinus

D. Funaria

Answer: C



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

(A) Mosses and Lichens are the first organisms to colonise a 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 Gymnoperms, male and female gametophytes are present within sporangia located on sporophyte.

A. B,C and D

B. A,D and E

C. B,C and E

D. A,C and D

Answer: B



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239. Male gametes are flagellated in

1. Anabaena

2. Ectocarpus

3. Spirogyra

4. Polysiphonia

A. Anabaena

B. Ectocarpus

C. Spirogyra

D. Polysiphonia

Answer: B



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240. Which one of the following statements is wrong?

1. Agar-agar is obtained from Gelidium and Gracilaria

2. Chlorella and Spirulina are used as space food

3. Mannitol is stored food in Rhodophyceae

4. Algin and carrageenan are products of algae.

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 carrogeen are products of algae.

Answer: C



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241. Which one is a wrong statement?

- A. Archegonia are found in Bryophyta, Pteridophyta and Gymnosperms
- B. Mucor has biflagellate zoospores
- C. Haploid endosperm is typical feature of gymnosperms
- D. Brown algae have chlorophyll a and c, and fucoxanthin

Answer: B



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242. Male gametophyte in angiosperms produces:

1. two sperms and a vegetative cell
 2. single sperm and a vegetative cell
 3. single sperm and two vegetative cells
 4. three sperms
-
- A. two sperms and a vegetative cell
 - B. single sperm and a vegetative cell
 - C. single sperm and two vegetative cells
 - D. three sperms

Answer: A



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243. Select the correct statement

- A. Salvinia, Ginkgo and Pinus all are gymnosperms
- B. Sequoia is one of the tallest trees
- C. The leaves of gymnosperms are not well adapted to extremes of climate
- D. Gymnosperms are both homosporous and heterosporous

Answer: B



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

A. Insects

B. Birds

C. Water

D. Wind

Answer: C



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245. Conifers are adapted to tolerate extreme environmental conditons because of

- A. 1. Broad hardy leaves
- B. 2. Superficial stomata
- C. 3. Thick cuticle
- D. 4. Presence of vessels.

Answer: C



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246. Which one of the following statements is wrong?

- A. Algae increase the level of dissolved oxygen in the immediate environment.

B. Algin is obtained from red algae, and carrageenin from brown algae.

C. Agar-agar is obtained from Gelidium and Gracilaria

D. Laminaria and Sargassum are used as food.

Answer: B



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247. Zygotic meiosis is characteristic of

A. Marchantia

B. Fucus

C. Funaria

D. Chlamydomonas

Answer: D



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248. An example of colonial algae is

A. 1.Chlorella

B. 2.Volvox

C. 3.Ulothrix

D. 4.Spirogyra

Answer: B



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249. Select the mismatch

- A. Pinus-Dioecious
- B. Cycas-Dioecious
- C. Salvinia -Heterosporous
- D. Equisetum-Homosporous

Answer: A



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250. Life cycle of Ectocarpus and Fucus respectively are

- A. haplontic, diplontic
- B. diplontic, haplodiplontic
- C. haplodiplontic, diplontic
- D. haplodiplontic, haplontic

Answer: C



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251. Which one is wrongly matched

- A. Unicellular organism -Chlorella
- B. Gemma cups-Marchantia
- C. Biflagellate Zoospores-Brown algae

D. Uniflagellate gametes-Polysiphonia

Answer: D



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252. Which of the following statements is correct?

1. Stems are usually unbranched in both Cycas and Cedrus.
2. Horsetails are gymnosperms.
3. Selaginella is heterosporous, while salvinia is homosporous.
4. Ovules are not enclosed by ovary wall in gymnosperms.

- A. Stems are usually unbranched in both *Cycas* and *Cedrus* .
- B. Horsetails are gymnosperms.
- C. *Selaginella* is heterosporous, while *Salvinia* is homosporous.
- D. Ovules are not enclosed by ovary wall in gymnosperms.

Answer: D



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Assertion And Reason

1. [A] : Flagella found in green algae are of tinsel type .

[R] : Flagella in algae are whiplash type .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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2. [A] : The mosses form dense growth .

[R] : They produce a large number of spores .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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3. [A] : Pteridophytes and Gymnosperms are included in Archegoniate .

[R] : They have archegonia as female reproductive organ .

A. 1) If both A and R are true and R is the correct explanation of A

B. 2) If both A and R are true but R is not the correct explanation of A

C. 3) If A is true and R is false

D. 4) If both A and R are false

Answer:



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4. [A] : Pinus bears resin canals .

[R] : Resin canals are found in cortex and bounded by a glandular epithelial layer that secretes resin.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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5. [A] : In terms , prothallus is club shaped .

[R] : Prothallus is derived from club shaped zoosporangia

.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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6. [A] : Either megasporophylls or microsporophylls are found in Gymnosperms .

[R] : Both mega and microsporophylls are common in Gymnosperms . Megasporophylls are smaller than microsporophylls .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



7. [A] : Rhizophore is considered to be stem structure .

[R] : Rhizophore develops from angle meristem present between the two branches of stem .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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8. [A] : In Selaginella/Pteris reduction division occurs during microspore formation only .

[R] : It was first shown by Zacharis and Strasburger in 1963 .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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9. [A] : Neottia and Monotropa are saprophytic angiosperms .

[R] : The association of a fungus with roots of higher plants is mycorrhiza.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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10. [A] : Fossil plants serve as an index for paleoclimates .

[R] : Because plant adaptations to varied environmental conditions are well known .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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11. [A] : Coralloid root of *Cycas* is confined to bacterial zone.

[R] : Nucleus is absent in young sieve cells .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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12. [A] : Heterospory has led to the reduction and specialization in spores .

[R] : Incipient heterospory has been found to occur in the fern *Platyzoma microphylla*.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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13. [A] : In Pinus only the dwarf roots become mycorrhizal

.

[R] : Seeds of Pinus are polycotyledonous .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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14. [A] : The mosses like liverworts , do not exhibit alternation of generation .

[R] : The adult gametophyte is conspicuous leafy green ,
photosynthetic plant in ferns .

A. If both A and R are true and R is the correct
explanation of A

B. If both A and R are true but R is not the correct
explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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15. [A] : Mosses do not seem to resist infestations by most fungi and are often seriously damaged by insects .

[R] : They do not possess antibiotic material .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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16. [A] : Monotropa is a parasitic plant .

[R] : It does not show proper mycorrhizal association .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

Answer:



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17. [A] : Some of the Sea kelps are used as fertilizers .

[R] : They are important source of minerals .

A. 1) If both A and R are true and R is the correct explanation of A

B. 2) If both A and R are true but R is not the correct explanation of A

C. 3) If A is true and R is false

D. 4) If both A and R are false

Answer:



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18. [A]: Angiosperms and gymnosperms both are flowering plants .

[R] : They both form covered seeds .

A. 1) If both A and R are true and R is the correct explanation of A

B. 2) If both A and R are true but R is not the correct explanation of A

C. 3) If A is true and R is false

D. 4) If both A and R are false

Answer:



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