

I I. In a flowering plant, meiosis occurs in the ---- -~~-----~~ producing a spore that develops into a female gametophyte.

- a) fruit
- b) seed
- c) stamen
- d) anther
- e) ovary

12. In which of the following do significant deposits of silica accumulate on the inner walls of the epidermal cells of the stems?

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

13. Which of the following is represented by fossil only?

- a) Cordaites
- b) Ginkgo
- c) Gnetum
- d) Welwitschia
- e) Azolla

14. The following order of plants does not contain living species:

- a) Order Ginkgoales
- b) Order Bennettatales
- c) Order Gnetales
- d) Order Osmundales
- e) Order Cycadales

## SECTION A

*of the following statements*

Indicate whether each is TRUE or FALSE Shade 'A' for TRUE and 'B' for FALSE

1. The oospore is the beginning of the sporophytic generation in Selaginella.

The liverworts, hornworts and mosses are usually placed before the vascular plants in present evidence from fossil records.

In Lycopodium all the sporophylls are of the same kind but the sporangia and the spores are of two different kinds.

4. Isoetes is heterosporous as well as monoecious.
5. Psilotum is homosporous and shows heteromorphic alternation of generations.
6. Certain fossils indicate that particular groups of plants or animals evolved from others.
7. All vascular plants produce pollen grains and seeds.
8. Primitive vascular plants have internal conducting tissues but do not produce seeds.

Each question is followed by alternative options.

Select the correct or best option for each question and shade in PENCIL on your scannable answer sheet, the answer space that bears the same letter as the option you have chosen.

9. Club moss is the common name of

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

10. Horsetails are an example of

- a) club mosses
- b) seedless vascular plants
- c) true ferns
- d) seed-producing vascular plants

15. Which is a trend seen in the evolution of plants

- a) Primitisc plants are heterospo•ous: anec<sup>d</sup>  
i dominant sporophyte; advanced plants
- b) Prim it A e plants has e have clotninant gametophy re.
- c) Primitnc hase spernv. advanc<sup>ed</sup> plants have non-rootilc sperm,
- d) Primtli\c i'}anß do not hase chloropln II cont ained swthin chloroplasts: advanced plants do.
- c) plants lune chlorophyll a, b, and advanced plants only have chlorophyll c,

16 In sexually reproducing plants. a cnplete life cycle involves;

- a) only special haploid cells cornbining to fortn a diploid individual t')  
special diploid cells diOding to form two haploid individuals,
- c) an alternation between a diploid stage and a haploid stage
- d) ^ one of the aboye is correct

17 In Isoctes

- a) all the lea', es are sporophylls
- b) the outer are sporophylls
- c) the inner leaves are sporophylls
- d) there are no sporophylls

18. Club moss is the common name of

- a) Selaginella
- b) Lycopodium
- c) Equisetum
- d) "farsilea

19. Fern plants are

- a) nonsaseular with seeds
- b) nomascu)ar without seeds
- c) vascular with seeds
- d) vascular ithout seeds

"Scouring rushes" are seedless vascular plants with a large amount of silica in their epidermal cells. Which group includes these organisms?

- a) Sphenopsida
- b) Lycopsida
- c) Psilotopsida
- d) Pteropsida
- e) Cycadopsida

21. Each Equisetum spore is surrounded by coiled elaters 

- a) curl tighter when the air is dry
- b) form a protective sheath to prevent dehydration
- c) have distinctive longitudinal grooves and whorls.
- d) unfurl as they dry, dislodging the spore
- e) release the spore when the weather is wet

22. Isoetes belongs to the Class

- a) Pteropsida
- b) Filicinae
- c) Lycopsida
- d) Psilotopsida
- e) Coniferopsida

23. The evolutionary trend from the ancestral algae to the more recently evolved seed plants shows

- a) decreased size of the gametophyte.
- b) increased prominence of the sporophyte generation.
- c) decreased duration of the gametophyte generation.
- d) a and b.
- e) All of the above.

24. Which describes a megagametophyte?

- a) It produces both archegonia and antheridium.
- b) It produces archegonia
- c) It releases flagellated sperm.
- d) It is produced by homosporous lycopods.
- e) It is produced by heterosporous gymnosperms.

25. When making the move from water to land, plants made modifications in all of the following except

- a) cell wall composition.
- b) conducting tissues.
- c) cell surface coverings.
- d) mode of reproduction.
- e) method of gas exchange.

## SECTION B

Fill in the blanks in the following statements

26. Land plants are considered to be the modified progeny of . . . . .

27. During early stages of vascular plant evolution, the . . . . .

became progressively smaller, more dependent on and protected by the proportionally larger

. . . . .

28. A palaeontologist is. . . . . . . . . . .

. . . . .

29. Sporophylls in Selaginella are spirally arranged round the apex of the reproductive shoot in

the form of a more or less distinct four angled cone called. . . . .

or

. . . . .

30. ..... among all the Pteridophytes produces the lowest number of in each male gametophyte.

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ntnong all the Pteridophyteq produces the lowest number of 30.

in each male garnetoph> te.

31. In the axil of the scale-leaf of Psilotum, a short stalk bears sporangiutn tenninally.

32 The gametophyte body of ..... resembles tiny carrots.

are tiny' g'reen leaf-like outgrowths on the stems of

hisk ferns (Psilotum).

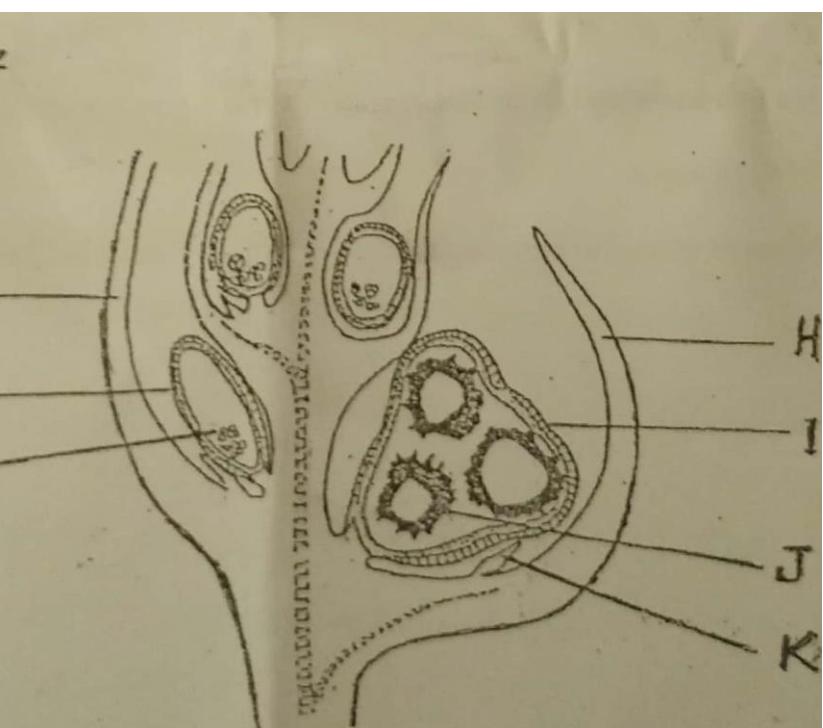
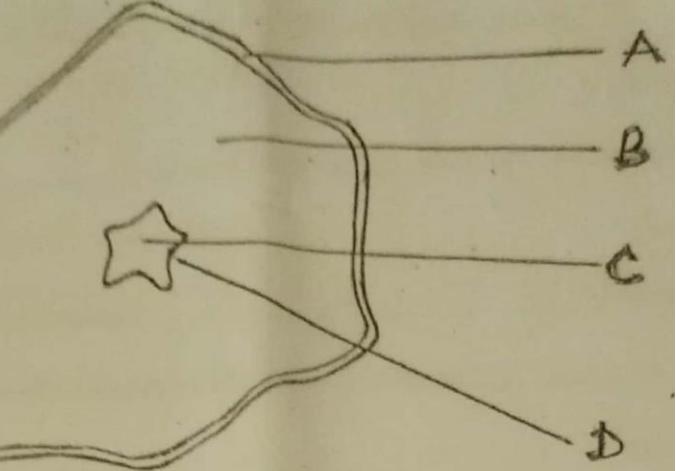
Answer the following questions in the spaces provided

34. GÄe No characteristics that help to distinguish the various species of horsetails from one another: i.....

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35. Figure I is a transverse section of Psilotum stem while Figure 2 is a longitudinal section of strobilus of Selaginella.

Prm ide the names of the parts of the diagrams in Figures I and 2 labelled from A to K.



ALFRED K\_APETORGBOR

DANIEL ADJEI FOR SCISA PRESIDENT 21'



Kwame Nkrumah University of Science and Technology  
Science Students' Association

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# Daniel ADJEI

## SCISA President

-Hopeful-

### Rising Beyond Limits

Daniel

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