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**M.Sc. (First Semester)
EXAMINATION, Dec. - Jan., 2021-22**

BOTANY

Paper Fourth

(Bryophyta, Pteridophyta and Gymnosperms)

Time : Three Hours]

[Maximum Marks : 80

[Minimum Pass Marks : 16

Note - Attempt all sections as directed.

Section - A

(Objective / Multiple choice questions)

(1 each)

Note : Attempt all questions

Choose the correct answers

1. Elaterophores are found in-
(A) Riccia
(B) Marchantia
(C) Pellia
(D) Anthoceros

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2. Photosynthetic thallus in Bryophyte is
(A) Gametophyte
(B) Sporophyte
(C) Haploid
(D) (A) and (C) both
3. Bryophytes are ancestors of
(A) Pteridophyte
(B) Gymnosperm
(C) Both (A) and (B)
(D) None
4. Peristome is found in
(A) Riccia
(B) Marchantia
(C) Anthoceros
(D) Funaria
5. Anthoceros belongs to
(A) Liverwort
(B) Hornwort
(C) Moss
(D) Stonewort

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6. Which of the following is amphibious
- (A) Algae
 - (B) Fungi
 - (C) Bryophyte
 - (D) All of the above
7. Which of the following is most primitive land plant
- (A) Psilotum
 - (B) Lycopodium
 - (C) Selaginella
 - (D) Equisetum
8. Carinal canal is found in
- (A) Lycopodium
 - (B) Selaginella
 - (C) Equisetum
 - (D) Marsilea
9. Which stele is most advanced
- (A) Protostele
 - (B) Siphonostele
 - (C) Solenostele
 - (D) Dictyostele

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10. Heterospory is found in
- (A) Lycopodium
 - (B) Equisetum
 - (C) Selaginella
 - (D) None
11. Coralloid root is found in
- (A) Cycas
 - (B) Pinus
 - (C) Gnetum
 - (D) None
12. Resin canals are found in the stem of
- (A) Cycas
 - (B) Pinus
 - (C) Gnetum
 - (D) All of the above
13. Transfusion tissue is found in the leaf of
- (A) Cycas
 - (B) Pinus
 - (C) Ephedra
 - (D) Gnetum

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14. Ovuliferous scale is found in

- (A) Cycas
- (B) Pinus
- (C) Ephedra
- (D) All of the above

15. " Chilgoja" is the seed of

- (A) Cycas
- (B) Pinus
- (C) Gnetum
- (D) Ephedra

16. Birbal Sahni explored

- (A) Williamsonia
- (B) Cycas
- (C) Pinus
- (D) Cycadeoidea

17. Amber is obtained from the fossils of

- (A) Cycas
- (B) Pinus
- (C) Cycadeoidea
- (D) Williamsonia

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18. Which of the following is a source of timber

- (A) Cycas
- (B) Pinus
- (C) Cedrus
- (D) (B) & (C) both

19. Which of the following is herbaceous and bushy .

- (A) Ginkgo
- (B) Ephedra
- (C) Gnetum
- (D) Thuja

20. Which of the following is most close to angiosperm

- (A) Cycadeoidea
- (B) Gnetum
- (C) Cedrus
- (D) Pinus

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Section - B

(2 marks each)

(Very short answer type questions)

Note: Attempt any eight questions in 2-3 sentences.

Write about :

1. Gemma cup.
2. Glossopodium's Use.
3. Stele in P silotum
4. "Sago" is obtained from?
5. Which plant produces protonema?
6. Dwarf shoot
7. Horneophyton
8. Stele in Lycopodium
9. Trabecula in selapinella
10. Pseudo - elater.

Section - C

(3 marks each)

(Short Answer Type Question)

Note : Attempt any eight questions in 75 words.

1. Sporophyte of pellia (Only diagram).

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2. Gametophyte of marchantia (Only diagram).
3. Rhizophore of selaginella : Notes on anatomy.
4. Describe various type of stele in Lycopodium.
5. Describe " Heterospory".
6. Capsule of funaria (Only diagram).
7. Describe prothallus of fern.
8. Stem of gnetum (Only diagram).
9. Flowers of Ephedra.
10. Sporocarp of marsilea (V.S. diagram).

Section - D

(5 marks each)

(Long Answer Type Questions)

Attempt any four questions in 150 words.

1. Describe vegetative reproduction in bryophytes.
2. Describe stelar evolution in pteridophyle.
3. Describe Heterospory & seed habit in pteridophyte.
4. Compare the leaf and stem of cycas and pinus with diagrams.
5. Describe the angiospermic characters of Gnetum.