

Subject: Botany
Paper name: Pteridophytes, Gymnosperms, Palaeobotany, Palynology
Paper No: BOT/VI/CC/17
Semester: 6th Semester

A. Multiple choice questions [25 (5 from each unit)]

1. *Marsilea* belongs to the class
 - a) Psilopsida
 - b) Sphenopsida
 - c) Lycopsida
 - d) Leptosporangiopsida

2. Which of the following do not show circinate vernation?
 - a) *Ophioglossum*
 - b) *Adiantum*
 - c) *Marsilea*
 - d) *Cyathea*

3. *Rhynia* appeared in the late
 - a) Devonian period
 - b) Permian period
 - c) Carboniferous period
 - d) Silurian period

4. Which plant show stigmarian root system?
 - a) *Calamites*
 - b) *Rhynia*
 - c) *Lepidodendron*
 - d) *Cordaites*

5. Which plant is popularly called “Maiden hair fern”?
 - a) *Marsilea*
 - b) *Adiantum*
 - c) *Ophioglossum*
 - d) *Pteris*

6. Which of the following are not found in Gymnosperms
 - a) Antheridia
 - b) Archegonia

- c) Ovules
 - d) Eggcells
7. Which one of the following is called maiden hair tree?
- a) *Ginkgo*
 - b) *Taxus*
 - c) *Ephedra*
 - d) None of the above
8. In *Ephedra*, the stalk bears
- a) 2-8 microsporangia
 - b) 2-7 microsporangia
 - c) 2-6 microsporangia
 - d) 2-5 microsporangia
9. Gymnosperms differs from the angiosperm
- a) having seeds
 - b) in being smaller in size
 - c) in showing heterospory
 - d) in having naked ovules
10. Leaves of which one of the following show dichotomous venation
- a) *Cycas*
 - b) *Ginkgo*
 - c) *Pinus*
 - d) *Ephedra*
11. Endosperm in gymnosperm is formed
- a) at the time of fertilization
 - b) before fertilization
 - c) after fertilization
 - d) along with development of embryo
12. Archegonia are absent in
- a) *Ephedra*
 - b) *Pinus*
 - c) *Taxus*
 - d) *Gnetum*

13. Which extinct gymnosperms resembled modern cycads?
- Seed ferns
 - Cordaitales
 - Bennettitales
 - Ophioglossales
14. Living fossil is
- Gnetum gnemon*
 - Gingko biloba*
 - Pinus roxburghi*
 - Ephedra*
15. The ovule in *Taxus* is
- orthotropous and sessile
 - orthotropous and stalked
 - anatropous and stalked
 - anatropous and sessile
16. Who suggested the name “Gondwana”?
- D.H.Maunsell
 - J.B.Jukes
 - H.B.Medlicott
 - W.T.Blanford
17. The best known seed of *Lyginopteris* was described under the name
- Lagenostoma*
 - Annularia*
 - Cordaitanthus*
 - Astromyelon*
18. *Calamites* belongs to the class
- Cycadopsida
 - Gnetopsida
 - Sphenopsida
 - Coniferopsida
19. Which era is known as “The age of angiosperms”?
- Mesozoic era
 - Cenozoic era
 - Palaeozoic era
 - Pre-Cambrian era

20. The best type of fossils where the external as well as the internal structures are preserved is
- Incrustation
 - Compression
 - Petrification
 - Compaction
21. Erdtman (1954) obtained pollen grains of *Pinus* at 200 km to
- 550 km
 - 650 km
 - 750 km
 - 850 km
22. In pollen morphology, the $PA/ED \times 100$ less than 50 is
- per-oblate
 - sub-oblate
 - spheroidal
 - prolate
23. Pollen grains which bear furrows are called
- pentate
 - porate
 - colpate
 - zonate
24. Pollen morphology have been found useful for separation of Cuscutaceae from
- Ranunculaceae
 - Convolvulaceae
 - Papaveraceae
 - Asteraceae
25. In USA, the main hay-fever plant is
- Ambrosia*
 - Alternaria*
 - Cannabis*
 - Helminthosporium*

B. Fill up the blanks [15 (3 from each unit)]

1. The sporangia – bearing fertile segment in *Ophioglossum* sp. is known as _____.
2. The adventitious roots of *Calamites* are referred to as _____.
3. *Lepidodendron* form bisporangiate cones called _____.
4. The term Gymnosperms was first used by _____.
5. Xylem of gymnosperms lacks _____
6. The most advanced order in gymnosperms are _____
7. The medicine _____ is obtained from *Ephedra*.
8. Just before fertilization, a gymnosperm ovule contains _____
9. *Taxus baccata* yields an alkaloid known as _____
10. The Lower Gondwana division shows predominance of the _____ flora
11. The Pteridospermales are also called as _____
12. _____ was the reproductive shoot of *Cordaites*.
13. _____ coined the term “Palynology.”
14. Pollen grains in which two or more colpi fused, usually at the poles and occasionally elsewhere are termed as _____
15. In _____ taxa, the different sporomorph are of the same basic type.

Key Answers

A. Multiple choice questions

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|--------|--------|--------|--------|--------|--------|--------|
| 1. d) | 2. a) | 3. d) | 4. c) | 5. b) | 6. a) | 7. a) |
| 8. c) | 9. d) | 10. b) | 11. b) | 12. d) | 13. c) | 14. b) |
| 15. a) | 16. c) | 17. a) | 18. d) | 19. b) | 20. c) | 21. b) |
| 22. a) | 23. c) | 24. b) | 25. a) | | | |

B. Fill up the blanks

1. sporangiferous spike
2. *Astromyelon*
3. flemingites
4. Theophrastus
5. Vessel
6. Gnetales
7. Ephedrin
8. Archegonia
9. Taxin
10. *Glossopteris*
11. Cycadofilicales
12. *Cordaitanthus*
13. Hyde and Williams
14. syncolpate
15. Stenopalynous