

Subject : **Botany**  
Paper : **IX (Pteridophyta, Gymnosperm, Paleobotany and Palynology)**  
Paper no: **BOT/VI/ CC/ 17**  
Semester : **VI**

**A. Multiple choice**

Tick (✓) the correct answer in the brackets provided:

UNIT – I

1. Sporocarp is formed in  
(a) *Marsilea* ( )  
(b) *Ophioglossum* ( )  
(c) *Lepidodendron* ( )  
(d) *Adiantum* ( )
2. Maiden hair fern is  
(a) *Ophioglossum* ( )  
(b) *Adiantum* ( )  
(c) *Marsilea* ( )  
(d) *Rhynia* ( )
3. Circinate venation is absent in  
(a) *Adiantum* ( )  
(b) *Marsilea* ( )  
(c) *Calamites* ( )  
(d) *Ophioglossum* ( )
4. Aerial axes are terminated with sporangia in  
(a) *Calamites* ( )  
(b) *Lepidodendron* ( )  
(c) *Rhynia* ( )  
(d) *Marsilea* ( )
5. Homosporous type of spore formation is found in  
(a) *Adiantum* ( )  
(b) *Marsilea* ( )  
(c) *Lepidodendron* ( )  
(d) *Ophioglossum* ( )

UNIT – II

6. Which one of the following is called maiden hair fern  
(a) *Ginkgo* ( )  
(b) *Taxus* ( )

- (c) *Ephedra* ( )  
(d) None of the above ( )

7. All the members of gymnosperm are

- (a) Heterosporous ( )  
(b) Homosporous ( )  
(c) Both (a) and )b) ( )  
(d) None of the above ( )

8. The longest archegonial neck among the gymnosperm is found in

- (a) *Ginkgo* ( )  
(b) *Taxus* ( )  
(c) *Ephedra* ( )  
(d) *Gnetum* ( )

9. Which one of the following gymnosperm is considered to be a living fossil?

- (a) *Pinus roxburghii* ( )  
(b) *Taxus baccata* ( )  
(c) (c) *Ginkgo biloba* ( )  
(d) *Gnetum ula* ( )

10. Ephedra belongs to class

- (a) Cycadopsida ( )  
(b) Gnetopsida ( )  
(c) Coniferopsida ( )  
(d) None of the above ( )

### UNIT – III

11. Majority of Gymnosperms in India are found in

- a) Tropical regions ( )  
b) Temperate regions ( )  
c) Arid region ( )  
d) Semi arid region ( )

12. Gymnosperm is considered to be evolved from

- a) Algae ( )  
b) Bryophyta ( )  
c) Pteridophyta ( )  
d) Angiosperm ( )

13. **Taxol** obtained from the bark of *Taxus* is used for

- a) Decoration purposes ( )  
b) making wine ( )  
c) Treatment of cold and cough ( )  
d) cancer treatment ( )

14. Megasporophyll is the term used in Gymnosperm to denote
- a) Carpel ( )
  - b) Stamens ( )
  - c) Leaves ( )
  - d) Female cone ( )
15. Ovule of *Cycas* is
- a) Orthotropous and long stalked ( )
  - b) Orthotropous and short stalked ( )
  - c) Anatropous and long stalked ( )
  - d) Anatropous and short stalked ( )

UNIT – IV

16. Which of the following is an example of a trace fossil ?
- a) Leaf ( )
  - b) Foot print ( )
  - c) Skeleton ( )
  - d) Tribolite ( )
17. Which of the following represent the longest time period ?
- a) Precambrium ( )
  - b) Paleozoic ( )
  - c) Mesozoic ( )
  - d) Cenozoic ( )
18. The upper Gondwana is characterised by
- a) Predominance of *Glossopteris* flora ( )
  - b) Accession of *Dicroidium* and declining of *Glossopteris* ( )
  - c) Arrival of *Ptilophyllum* ( )
  - d) Declining of *Ptilophyllum* ( )
19. The root of Cordaites is known as
- a) Amyelon ( )
  - b) Mesoxylon ( )
  - c) Cordaianthus ( )
  - d) Cardiocarpus ( )
20. The 'age of Gymnosperms' is
- a) Precambrium ( )
  - b) Paleozoic ( )
  - c) Mesozoic ( )
  - d) Cenozoic ( )

UNIT – V

21. At maturity, majority of pollen grains are dispersed at
- a) 1 celled stage ( )
  - b) 2 celled stage ( )
  - c) 3 celled stage ( )
  - d) 4 celled stage ( )
22. Anemophilous plants produce
- a) numerous, small, dry, smooth, and light pollen grains ( )
  - b) numerous, large, sticky, smooth, and light pollen grains ( )
  - c) large, dry, sticky and light pollen grains ( )
  - d) few, small, dry, smooth, and heavy pollen grains ( )
23. Pollen grains has
- a) No wall ( )
  - b) Intine ( )
  - c) Exine ( )
  - d) Both intine and exine ( )
24. Pollen grains may be
- a) Apolar ( )
  - b) Polar ( )
  - c) Either apolar or polar ( )
  - d) All of the above ( )
25. The symptoms of Pollen Allergy are
- 1) Sickness
  - 2) Runny nose.
  - 3) Itchiness of throat
  - 4) Sneezing
- a) 1 & 3 ( )
  - b) 2,3,4 ( )
  - c) 2,4 ( )
  - d) 1,2 ( )

**Fill in the blanks:**

Unit 1

1. Geological occurrence of Rhynia is.....period
2. *Marsilea* belongs to class .....
3. In *Calamites* spores are provide with .....

Unit 2

4. According to K.R. Sporne classification of gymnosperm, there are ..... orders.
5. In *Ginkgo*, fertilisation takes place ..... months after pollination.
6. During reproduction, gymnosperms produced two kinds of spores,.....and .....

Unit 3

7. Archegonia are not formed in \_\_\_\_\_
8. Sago a rich source of starch is obtained from \_\_\_\_\_
9. Archegonia of \_\_\_\_\_ has the longest and largest neck among gymnosperm

Unit 4

10. \_\_\_\_\_ are known as Seed ferns
11. Seed of *Lyginopteris* is known as \_\_\_\_\_
12. \_\_\_\_\_ are petrified spherical balls containing plant parts

Unit 5

13. The main purpose of pollen production is for \_\_\_\_\_
14. \_\_\_\_\_ are formed when paired pollen grains are arranged at right angle to each other
15. Pollen grains are produced in \_\_\_\_\_ gymnosperm.

**KEY ANSWERS**

Unit 1

1. (a) – *Marsilea*
2. (b) – *Adiantum*.
3. (d) – *Ophioglossum*
4. (c) – *Rhynia*
5. (d) – *Ophioglossum*

Unit 2

6. (a) – *Ginkgo*
7. (a) – Heterosporous.
8. (c) – *Ephedra*.
9. (c) – *Ginkgo biloba*
10. (b) – Gnetopsida

Unit 3

11. b )
12. c )
13. d )
14. a )
15. b )

Unit 4

16. b )
17. a )
18. c )
19. a )
20. c )

Unit 5

21. b )
22. b )
23. d )
24. c )
25. b )

**Fill in the blanks:**

Unit 1

1. Lower Devonian.
2. Pteropsida
3. Elaters

Unit 2

4. 8 orders
5. 4 months
6. Microspore , Megaspore.

Unit 3

7. *Gnetum*
8. *Cycas*
9. *Ephedra*

Unit 4

10. Cycadofilicales
11. *Lagenostoma lomaxii*
12. Coal balls

Unit 5

13. reproduction and multiplication
14. Decussate terad
15. Male cone