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14 (BOT-1) 1026

2022

BOTANY

Paper : BOT-1026

**[Diversity II (Pteridophytes,
Gymnosperm and Angiosperm)]**

Full Marks : 80

Time : Three hours

**The figures in the margin indicate
full marks for the questions.**

1. Write the correct answer : 1×6=6
- (i) Spore bearing organ of *Ophioglossum* is —
- (a) Synangium
 - (b) Spike
 - (c) Sorus
 - (d) Sporocarp

Contd.

(ii) Members of Calamitales dominated during the geological period of —

- (a) Cretaceous
- (b) Triassic
- (c) Jurassic
- (d) Carboniferous

(iii) Presence of peltate sporangiophore is the characteristic feature of —

- (a) Psilophytopsida
- (b) Lycopsidea
- (c) Sphenopsida
- (d) Pteropsida

(iv) Which of the following structures is not found in Selaginella ?

- (a) Legule
- (b) Ramenta
- (c) Trabaculae
- (d) Rhizophore

(v) Takhtajan amalgamated Commelinidae with which of the following taxons ?

- (a) Alismatidae
- (b) Liliidae
- (c) Arecidae
- (d) Ranunculidae

(vi) _____ is the most primitive angiospermic family as considered in the latest APG classification.

- (a) Nymphaeaceae
- (b) Austrobaileyaceae
- (c) Amborellaceae
- (d) Winteraceae

2. Distinguish between the following :

(any three)

3×3=9

- (i) Cannaceae and Zingiberaceae
- (ii) Gametophytic structure of Eusporangiate and Leptosporangiate pteridophyta

(iii) Effective and Valid publication

(iv) Holotype and Neotype

3. Answer **any five** of the following : $5 \times 5 = 25$

(i) Why is *Osmunda* an intermediate between eusporangiate and leptorporangiate form ?

(ii) What are the characteristic features of the fossil order Psilophytales

(iii) Which dicotyledonous family will you consider primitive and why ?

(iv) What is your concept on co-evolution of flowers and pollinators.

(v) What are the advanced characters of *Gnetum* ?

(vi) What is the significance of telome theory in the evolution of pteridophytic sporophyte ?

4. Answer **any four** of the following :

$10 \times 4 = 40$

(i) Ferns are the most developed pteridophytic plant. Elucidate the soral evolution in ferns.

- (ii) Give a detailed account on classification of gymnosperms. Which one do you prefer and why? Illustrate critically the systematic position of Taxads.
5+1+4=10
- (iii) What are various techniques to study different types of fossils? Write in detail.
- (iv) What are herbaria? Name *five* important Indian herbaria. Write the role of herbaria in teaching and research.
1+2+7=10
- (v) Giving suitable diagram compare and contrast the families of the order Scrophulorales.
- (vi) What are the characters of the order Orchidales? Characterise the family Orchidaceae. Why is this family considered highly developed among Monocotyledons?
1+6+3=10
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