

U.G. 3rd Semester Examination - 2019**BOTANY****[HONOURS]****Course Code : BOT(H)CC-06-T****(Diversity of Gymnosperms and Paleobotany)**

Full Marks : 40

Time : 2½ Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***Answer all the questions.**1. Answer any five questions : 2×5=10

- a) What is the basis for the progymnosperm concept?
- b) Mention any two fern characters of *Cycas*.
- c) What is sulphur shower?
- d) Distinguish between ovuliferous scale and interserrate scale.
- e) What does the suffix "dendron" indicate? Give one example.
- f) What is meant by Punctuated equilibrium?

[Turn over]

g) Differentiate compression and impression fossil.

h) What are index fossils? Give one example.

2. Answer any **two** of the following questions :

5×2=10

a) What are the causes of mass extinction in plant fossil record?

b) Discuss the phylogenetic importance of *Archaeopteris*.

c) Describe the male and female strobili of *Gnetum*.

d) Describe radio-carbon dating of fossils.

3. Answer any **two** questions :

10×2=20

a) Describe embryogeny of *Pinus*. Mention the angiospermic features of *Gnetum*. What are the active principles of *Ginkgo* and *Ephedra* having therapeutic importance?

4+4+2

b) Name the palaeobotanist who reconstructed *Williamsonia Sewardiana* and in which year. Give the names of the different organ genera of the reconstructed plant. Describe its male and female fructifications. Mention its geological and geographical distribution.

1+1+2+4+1+1

c) Compare the female gametophytes of *Cycas* and *Gnetum* with suitable diagrams. Which do you

think is advance and why? Give the Indian distribution of *Ephedra* species. 4+2+4

- d) i) Who proposed the 3-fold classification of Indian Gondwana system? Give a brief account of this classification and the major megafossil assemblages. 1+5
- ii) Discuss the evidences used in reconstruction of fossil plants. 4
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