



WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 2nd Semester Examination, 2022

BOTACOR04T-BOTANY (CC4)

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

Candidates should answer in their own words and adhere to the word limit as practicable.

All symbols are of usual significance.

1. Answer the following questions: 1×6 = 6
 - (a) What is Amphigastria? Where is it found?
 - (b) Mention the geographical and geological (time period) distribution of *Rhynia*.
 - (c) Name one monoecious Gymnosperm.
 - (d) Differentiate between the Rhizoids of *Riccia* and *Funaria*.
 - (e) What is Ligule? Mention its significance.
 - (f) Mention one tree member of *Gnetum*.

2. Answer the following questions (any *eight*): 3×8 = 24
 - (a) Mention the basic differences between the alternation of Generations of Bryophytes and Pteridophytes.
 - (b) Distinguish between Megaphyllous and Microphyllous leaves with regard to Pteridophytes.
 - (c) Mention different Hydrophytic and Xerophytic characters of *Equisetum*.
 - (d) Discuss briefly about the morphological nature of the sporangial structure of *Psilotum*.
 - (e) What is girdling leaf trace? Mention the characters which *Cycas* shares with Ferns. 1+2 = 3
 - (f) Compare the transfusion tissue present in the *Cycas* leaflet and *Pinus* needle.
 - (g) Compare the morphological nature of the ovuliferous scale of *Pinus*.
 - (h) Briefly mention the economic importance of gymnosperms as a source of medicine and essential oil. 1 $\frac{1}{2}$ + 1 $\frac{1}{2}$ = 3
 - (i) Name one heterosporous pteridophyte. Draw and describe the sporangium of *Pteris*.
 - (j) What is Antheridiophore and Archegoniophore? How would you distinguish them? 2+1 = 3
 - (k) Enumerate ecological and economic importance of *Sphagnum*. 1 $\frac{1}{2}$ + 1 $\frac{1}{2}$ = 3

(l) Mention the features which *Anthoceros* shares with Chlorophyceae and Pteridophytes. $1\frac{1}{2} + 1\frac{1}{2} = 3$

3. Answer the following questions (any *two*): $5 \times 2 = 10$

- (a) *Cycas*, *Pinus* and *Gnetum* — which one is most close to Angiosperm? Justify your answer with reasons. Mention the name of Gymnosperm having Diploxylic vascular bundle and winged pollen grain. $1 + 3 + \frac{1}{2} + \frac{1}{2} = 5$
- (b) Discuss the concept of progressive sterilization of potentially sporogenous tissue, regarding the evolution of bryophytic sporophyte.
- (c) How would you separately differentiate the thallus of *Riccia* and *Anthoceros* by internal organization, with labelled diagram? $3 + 2 = 5$
- (d) Differentiate between the elaters of *Marchantia* and *Equisetum* and describe the gametophytic structure of *Psilotum*.

N.B. : Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.

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