



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

(1) 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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