C-HENT-N-ANSMA

BOTANY

Paper – I

*Time allowed : **Three** Hours*

*Maximum Marks : **200***

Question Paper Specific Instructions

Please read each of the following instructions carefully before attempting questions :

*There are **EIGHT** questions in all out of which **FIVE** are to be attempted.*

*Questions no. **1** and **5** are compulsory. Out of the remaining **SIX** questions, **THREE** are to be attempted selecting at least **ONE** question from each of the two Sections A and B.*

Attempts of questions shall be counted in chronological order. Unless struck off, attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.

All questions carry equal marks. The number of marks carried by a question/part is indicated against it.

*Answers must be written in **ENGLISH** only.*

Neat sketches may be drawn, wherever required.

SECTION A

Q1. Answer the following keeping your answers brief and to the point : *5×8=40*

(a) What are the pigments that are found in red algae ? *5*

(b) What are the different types of flagella found in fungi ? *5*

(c) How significant is the parasexuality in *Aspergillus* ? *5*

(d) Comment on the structure, location and function of transfusion tissue. *5*

(e) Comment on the contractile vacuoles in *Euglena*. *5*

(f) What is the heterotrichous habit of moss protonema growth ? *5*

(g) What are the xerophytic and hydrophytic characters found in the rhizome anatomy of *Equisetum* ? *5*

(h) Differentiate between prokaryote and eukaryote. *5*

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Q2. (a) Explain the molecular basis of plant-pathogen interaction. *10*

(b) Explain variations in male reproductive structures in liverworts. *10*

(c) Briefly discuss the phylogeny of algae. *10*

(d) Write notes on the distribution of bryophytes and pteridophytes in deciduous and evergreen forests of India. *10*

Q3. (a) What is meant by modelling and how does it help in disease forecasting ? *10*

(b) Giving suitable reasons, discuss inter-alia evolutionary status of *Psilotum*, *Selaginella* and *Marsilea*. *15*

(c) Discuss the role of amphibious plants in the evolution of land plants. *15*

Q4. (a) Explain to what extent has the technique of micropropagation been successful in achieving our goals. *15*

(b) Citing suitable examples, explain how laxity in quarantine procedure can have disastrous effects. *15*

(c) Write a brief note on the advantages of diploid carposporophyte generation in red algae. *10*

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SECTION B

Q5. Answer the following keeping your answers brief and to the point : *5×8=40*

(a) Differentiate between megasporogenesis and megagametogenesis. *5*

(b) Differentiate between Palaeozoic and Coenozoic plants. *5*

(c) Differentiate between Isotype and Syntype. *5*

(d) Comment on the stratification of pollen grain walls. *5*

(e) Why are gymnosperms called naked-seeded plants ? *5*

(f) Comment on *Plumbago* type of embryo sac development. *5*

(g) What are the angiospermic features of *Gnetum* ? *5*

(h) What are the unique features of Brassicaceae ? *5*

Q6. Draw scientifically accurate diagrams of the following and label the parts : *10×4=40*

(a) Floral formula and floral diagram of Ranunculaceae and Rosaceae *10*

(b) L.S. of capsule of *Funaria* *10*

(c) Anatomy of *Pinus* needle *10*

(d) Stages depicting the formation of vegetative and generative cells during male gametophyte development in angiosperms *10*

Q7. (a) "Ethnobotany provides important clues to the discovery of modern drugs." Justify the statement giving suitable examples. *15*

(b) "*Gnetum* is a link between seed plants and seedless plants." Justify the statement. *10*

(c) Differentiate between normal and abnormal secondary growth in dicot stem. Discuss with diagrams wherever necessary. *15*

Q8. (a) Compare Bentham and Hooker's system of classification with the system of classification of Hutchinson. *15*

(b) Give a concise account of Cordaitales and justify why they form an important group. *10*

(c) Write the botanical name, family, active constituents and uses of any five medicinal plants of commercial importance in India. *15*

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