

**CC/M/EXAM.**  
**2020**  
**BOTANY**  
**PAPER—I**

Time : 3 hours ]

[ Full Marks : 250

**Note :** Question Nos. **1** and **5** are compulsory and out of the remaining, any **three** are to be attempted choosing at least ONE question from each section. The number of marks carried by a question/part is indicated against it .

SECTION—A

1. Answer *any five* of the following questions :

10×5 = 50.

- (a) Write a note on cell wall of fungi.
- (b) What are viroids?
- (c) Write briefly on gametophytic structure of *Anthoceros*.
- (d) Write the rules of priority and their limitations.
- (e) Describe the stamens of the members of *Brassicaceae*.
- (f) Giving suitable diagram, write about the range of stamens in *Zingiberales*.
- (g) With a neat diagram, write a note on sporangiospores of Sphenopsida.

2. Answer the following questions :

- (a) What is Typification? Describe the various types mentioned in ICN. 2+18=20
- (b) What is numerical taxonomy? Give a detailed account on the various steps involved with it. 2+13=15
- (c) What is double fertilization? Describe the method of double fertilization in angiosperms. Why is it called triple fusion? 2+11+2=15

3. Answer the following questions :

- (a) What is stele? Describe the different types of steles found in pteridophytes along with evolution of steles. 3+14+3=20
- (b) Why are viruses called intermediate between living and non-living? Write an account on viral replication. 3+12 = 15
- (c) Give a brief account on life cycle of Gnetum. Why the genus is considered as an advanced one? 1+14 = 15

4. Answer the following questions :

- (a) What is endosperm? Giving suitable diagrams, describe the various types of endosperms found in angiosperms. 4+16=20
- (b) What do you mean by herbarium? Write the method of herbarium preparation. Give examples of four prominent herbaria of the world. Also write the role of herbaria in teaching and research. 3+5+2+5=15
- (c) Give a general account on process of tissue culture. What are the precautions to be taken during this process? 13+2=15

### SECTION—B

5. Write short notes on *any five* of the following : 10×5=50

- (a) Viral replication
- (b) Reproduction in lichen
- (c) Fossil group Bennettitales
- (d) Differences of anatomy of C<sub>3</sub> and C<sub>4</sub> plants
- (e) Characteristic features of the family *Solanaceae*
- (f) Physiology of parasitism
- (g) Somaclonal variation

6. Answer the following questions :

- (a) Write botanical names, cultivation methods, extraction, preparation and uses of two major beverage plants of India. 10+10=20
- (b) Giving suitable diagrams, write the characteristic features of the family *Asteraceae*. Why the family is considered highly advanced among dicotyledons? 10+5=15
- (c) Write a detailed account on application of microbiology in industry and medicine. 8+7=15

7. Answer the following questions :

- (a) Why are bryophytes called as amphibians of the plant kingdom? Systematically, write in detail about spore dispersal mechanisms in various genera of bryophytes. 3+17=20
- (b) What are the different types of life cycle patterns found in different algal groups? Giving sketch, describe each of the life cycle types. 2+13=15
- (c) What are the major timber-yielding plants of India? Mention the uses of five such plants along with their botanical names. 5+10=15

8. Answer the following questions :

- (a) What is Heterospory? Giving suitable diagrams, write the life history of a heterosporous pteridophyte. How does Heterospory lead to seed habit? 2+12+6=20
- (b) Giving some examples, write how embryological characters are helpful in solving taxonomic problems. 15
- (c) What is polyembryony? Write an account on different types of polyembryonic conditions found in angiosperms. 2+13=15

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