

2011
BOTANY (Optional)
Paper : I

370076

Standard : Degree

Total Marks : 200

Nature : Conventional (Essay) type

Duration : Three hours

- N.B. :** 1) Answers must be written in **English** only.
 2) Question No. 1 is **compulsory**. Of the remaining questions, attempt **any four** by selecting one question from **each Section**.
 3) Figures to the **RIGHT** indicate marks of the respective question.
 4) Number of optional questions upto the prescribed number in the order in which they have been solved will only be assessed. Excess answers will not be assessed.
 5) Credit will be given for orderly, concise and effective writing.
 6) Draw neat labelled diagrams **wherever** necessary.
 7) Candidate should not write roll number, any name (including their own), signature, address or any indication of their identity anywhere inside the answer book otherwise he/she will be penalised.

1. Answer any four of the following questions :	Marks
(a) Describe heterotrichous thallus organization in algae.	10
(b) Bryophytes are called as “amphibians of plant kingdom”. Discuss.	10
(c) Give an account of different types of stomata found in angiosperms.	10
(d) Give an account of features of botanical garden.	10
(e) Differentiate between gymnosperms and angiosperms.	10

SECTION – A

2. Answer the following sub-questions :	
(a) Give an account of origin and evolution of sex in algae.	20
(b) Describe the different types of mycelia and spores produced in the life cycle of <u>Puccinia graminis tritici</u> .	20
3. Answer the following sub-questions :	
(a) Give an account of economic importance of algae with suitable examples.	20
(b) What are Lichens ? Give an account of habit, habitat and internal morphology of lichens. Add a note on their ecological importance.	20

P.T.O.

SECTION – B

4. Answer the following sub-questions :

- (a) Comment on the morphological and anatomical peculiarities in sporophyte of Anthoceros. 10
- (b) Give an account of general characters of sphenopsida. 10
- (c) Describe the ultrastructure of bacterial cell. 10
- (d) Describe the citrus canker with reference to causal organism, symptoms and control measures. 10

5. Answer following sub-questions :

- (a) Give an account of general characters of bryophytes. 10
- (b) Describe different spore producing structures found in pteridophytes. 10
- (c) Give an account of role of bacteria in agriculture. 10
- (d) Discuss the various defence mechanisms developed by the plants against pathogens. 10

SECTION – C

6. Answer the following sub-questions :

- (a) Describe external and internal morphology of Pinus needle. 10
- (b) Give distinguishing characters, floral formula and floral diagram of brassicaceae. 15
- (c) Give an illustrated account of the development of the monosporic female gametophytes in angiosperms. 15

7. Answer the following sub-questions :

- (a) Describe the internal structure of ovule in Gnetum. 10
- (b) Explain the use of phytochemistry in systematics of angiosperms. 15
- (c) What is polyembryony ? Discuss causes and significance of polyembryony. 15

SECTION – D

8. Answer the following sub-questions :

- (a) Give an account of application of palaeobotany in oil and coal exploration. 10
- (b) Describe source, preparation and uses of Azadirachtin and Trichoderma. 15
- (c) What is bioenergy ? Give brief account of different sources of bioenergy with examples. 15

9. Answer the following sub-questions :

- (a) Describe morphology of cycadeoidea fructification. 10
- (b) Give botanical name, family, plant part used, active principle and medicinal uses of Amla and Ginger. 15
- (c) Give an account of herbal cosmetic industries present in Maharashtra. Add a note on their significance and prospectus. 15