

Reg. No. : .....

**D 2158**

**Q.P. Code : [D 09 PBO 06]**

(For the candidates admitted from 2009 onwards)

M.Sc. DEGREE EXAMINATION, MAY 2014.

Second Year

Part III — Botany

**ENVIRONMENTAL BOTANY AND CONSERVATION  
BIOLOGY**

Time : Three hours

Maximum : 100 marks

Answer any FIVE of the following.

Each question carry equal marks.

(5 × 20 = 100)

1. Explain the following :
  - (a) Concept of ecosystem. (5)
  - (b) Biotic community. (5)
  - (c) Ecological pyramids. (10)
2. Discuss the following :
  - (a) Ecological indicators. (10)
  - (b) Nitrogen cycle. (10)

3. Write an account on the sources, effects and control of water pollution. (20)
4. Discuss the effects and control measures of the following :
  - (a) Radiation pollution. (5)
  - (b) Noise pollution. (5)
  - (c) Soil pollution. (10)
5. Explain the role of environmental organisation and agencies in conservation of flora and fauna. (20)
6. Write notes on the following :
  - (a) Forest conservation through laws. (6)
  - (b) World conservation strategy. (7)
  - (c) National conservation strategy. (7)
7. Explain the principles and applications of ex situ and in situ conservation of national resources. (20)
8. Describe the following :
  - (a) Methods of studying plant community. (10)
  - (b) Air pollution and control measures. (10)

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**D 2162**

**Q.P. Code : [D 09 PBO 07]**

(For the candidates admitted from 2009 onwards)

M.Sc. DEGREE EXAMINATION, MAY 2014.

Second Year

Part III – Botany

**ANGIOSPERM SYSTEMATICS**

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

(5 × 20 = 100)

1. Write an account on Hutchinson system of classification. Add a note on its merits and demerits. (20)
2. Describe the distinguished characters of Polysalaceal, Portulaceal, Onagraceal and Aizoaceal. (20)
3. Explain the important features and economic importance of Oleaceal, Pedaliaceal and Cyperaceal. (20)

4. Write notes on the following :
  - (a) Keys (5)
  - (b) Botanical gardens. (5)
  - (c) Role of Embryology in Taxonomy. (10)
5. Explain the following :
  - (a) Biosystematics (10)
  - (b) Phenotypic plasticity. (10)
6. Discuss the following :
  - (a) Typitication (6)
  - (b) Principles of priority (4)
  - (c) Effective and valid publication (5)
  - (d) Choice and rejection of names. (5)
7. Give an account on Engler and Prantl system of classification. Add a note on its merits and demerits. (20)
8. Explain the following :
  - (a) Flora and Monographs (10)
  - (b) Numerical Taxonomy. (10)

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**D 2163**

**Q.P. Code : [D 09 PBO 08]**

(For the candidates admitted from 2009 onwards)

M.Sc. DEGREE EXAMINATION, MAY 2014.

Second Year

Part III — Botany

**BIOTECHNOLOGY AND GENETIC ENGINEERING**

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

Each question carry equal marks.

(5 × 20 = 100)

1. Describe the Biological Nitrogen fixation and add a note on genetics of diazotrophs. (20)
2. Define PCR. Explain the principle, steps involved in PCR along with few applications. (20)
3. Give a note on transgenic plants. Explain briefly about the gene transfer methods. (20)
4. Elaborate the principles of cloning vectors and add a note on cloning strategies. (20)

5. Write an account on in situ and ex situ conservation methods. (20)
6. What is Biopesticide? Give a brief note on biological control of pesticides with special reference to Bacteria and Fungi. (20)
7. Explain about the enzymes useful for genetic engineering. (20)
8. Define Biofuels. Explain the Biochemistry and application of Biofuels with ethanol production. (20)

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**D 2159**

**Q.P. Code : [D 09 PBO 09]**

(For the candidates admitted from 2009 onwards)

M.Sc. DEGREE EXAMINATION, MAY 2014.

Second Year

Botany

**PLANT PHYSIOLOGY AND BIOCHEMISTRY**

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

(5 × 20 = 100)

1. Discuss the biological significance of water with regard to plant system. Describe the mechanism of transpiration with a neat sketch. (10+10=20)
2. Describe the mechanism of photosynthesis in plants. (20)
3. Explain the metabolic fate of glucose through Glycolysis, citric acid cycle and Electron transport chain with a note on its ATP equivalents. (20)
4. Define and classify Carbohydrates in detail with examples. Discuss the phenomenon of isomerism in monosaccharides. (15 + 5 = 20)

5. Classify amino acids and draw the structures of all 20 amino acids that occur in proteins. (20)
6. Classify lipids in detail and discuss the properties of lipids in general. (20)
7. Discuss the levels of organization in proteins with suitable illustrations. (20)
8. Define laws of thermodynamics. Classify and describe the properties of enzymes. Explain the mechanism of action of enzymes. (5 + 10 + 5 = 20)

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**D 2160**

**Q.P. Code : [D 09 PBO 10]**

(For the candidates admitted from 2009 onwards)

M.Sc. DEGREE EXAMINATION, MAY 2014.

Second Year

Botany

**FOOD SCIENCE AND NUTRITION**

Time : Three hours                      Maximum : 100 marks

Answer any FIVE of the following.

Each question carries equal marks.

(5 × 20 = 100)

1. Explain different food groups and planning diets requirements for different socio economic levels. (20)
2. Give an account on the processing, composition and methods of cooking of Dhal and Nuts. (20)
3. Explain the nutritional importance of carbohydrates, protein and lipids. (20)

4. Write notes on the following :
  - (a) Essential fatty acids. (10)
  - (b) Etiology of atherosclerosis. (10)
5. Write short notes on the following :
  - (a) Protease inhibitors. (7)
  - (b) Haemoagglutinins. (7)
  - (c) Cyanogens. (6)
6. Give an account on the nutritional importance of minerals and vitamins. (20)
7. Briefly explain the following : (4 × 5 = 20)
  - (a) Lathrogens
  - (b) Saponins
  - (c) Allergens
  - (d) Carcinogen.
8. Explain the following :
  - (a) Physiological role and prevention of toxicity. (10)
  - (b) Strategies for combating malnutrition. (10)

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**D 2161**

**Q.P. Code : [D 09 PBO 11]**

(For the candidates admitted from 2009 onwards)

M.Sc. DEGREE EXAMINATION, MAY 2014.

Second Year

Part III — Botany

HORTICULTURE

Time : Three hours

Maximum : 100 marks

Answer any FIVE of the following.

All questions carry equal marks.

(5 × 20 = 100)

1. Write short notes on :
  - (a) Chemical fertilizers. (10)
  - (b) Organic fertilizers. (5)
  - (c) Bio-fertilizers. (5)
2. Explain briefly :
  - (a) Layering. (5)
  - (b) Grafting (5)
  - (c) Budding (5)
  - (d) Cutting. (5)

3. Write notes on :
  - (a) Lawn making and maintenance. (10)
  - (b) Bonsai making and its types. (10)
4. Explain the following :
  - (a) Cut flowers. (5)
  - (b) Flower arrangement. (7)
  - (c) Erosion control. (8)
5. Write an account on biological control of weeds and add a note on its advantages. (20)
6. Explain the role of growth regulators in horticulture. (20)
7.
  - (a) Describe the cultivation of Mango. (10)
  - (b) Explain the cultivation of Potato. (10)
8. Explain the following :
  - (a) Glass Houses. (5)
  - (b) Parthenocarpy. (5)
  - (c) Preservation of fruits and vegetables. (10)



**Q. P. Code: DO9PBO12**

(For candidates admitted from 2009 onwards)

M.Sc. Degree Examinations, May - 2014

Botany

Second Year

FOREST BOTANY

Time: 3 hours

Maximum: 100 marks

Each question carry equal marks. (5x20=100)

Answer any FIVE of the following.

1. Write note on the following:

(a). Tropical forest (5)

(b). Temperate forest (5)

(c). Monoculture forest (5)

(d). Industrial forestry (5)

2. Write the interrelationship between forest genetics and forest ecology. (20).

3. Give an account on major and minor forest products. (20).

4. Write an elaborate account on composition and classification of world forests. (20).

5. Describe in detail on seed dynamics in forest. (20).

6. Write a brief note on the following:

(a). Photosynthetic processes in forest. (10).

(b). Branching pattern of trees. (10).

7. Describe the rules and methods of forest diameter measurement. (20).

8. Discuss the progress to be achieved in social forestry (20).



**Q. P. Code: DO9PBO13**

(For candidates admitted from 2009 onwards)

M.Sc. Degree Examinations, May - 2014

Botany

Second Year

ETHNO BOTANY

Time: 3 hours

Maximum: 100 marks

Answer any FIVE of the following:

Each question carry equal marks. (5x20=100)

1. Discuss the conservation of ethno botanical heritage at national and global level.

2. Explain the role of human in the destruction of forests.

3. Describe the relation between geology, phytogeography and ethno botany.

4. Discuss the relation of ethno botany with society, religion and archaeology.

5. Explain in detail how ethno botany is linked with food, medicine and economic relations.

6. Write the ethno botanical and ethno biological heritage of *Mulla*, *Kanikkars* and *Thodas*.

7. Give an account on conservation of ecosystem and selected plant species.

8. Write in detail on ethnography and ethno botanical research.

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