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Reg. No. : .....

D 2153 **Q.P. Code : [D 09 PBO 01]**

(For the candidates admitted from 2009 onwards)

M.Sc. DEGREE EXAMINATION, MAY 2014.

First Year

Botany

PHYCOLOGY, MYCOLOGY, BACTERIOLOGY AND VIROLOGY

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

Draw diagrams wherever necessary.

(5 × 20 = 100)

1. (a) Write an account on classification of algae by Fritsch. (15)

   (b) Discuss the phylogeny and interrelationships of Rhodophyta. (5)

2. (a) Explain the sexual reproduction in Oomycetes and Ascomycetes. (15)

   (b) Discuss the phylogeny and interrelationships of Basidiomycetes. (5)

3. (a) Give an account on classification of lichens by Hale. (10)

   (b) Explain the anatomical structure of lichen thallus. (10)

4. (a) Explain the microbial production of Vinegar. (10)

   (b) Discuss the isolation and maintenance of pure culture of bacteria. (10)

5. (a) Give an account on the structure and replication of bacteriophages. (10)

   (b) Explain the isolation and purification of plant viruses. (10)

6. (a) Explain the range of structure in algae. (10)

   (b) Discuss heteromorphic alternation of generation in algae. (10)

7. (a) Write an account on the host-parasite interaction. (10)

   (b) Explain Heterothallism in fungi. (10)

8. (a) Describe the microbial production of lactic acid. (10)

   (b) Explain the growth curve of bacterial population. (10)

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Reg. No. : .....

D 2154 **Q.P. Code : [D 09 PBO 02]**

(For the candidates admitted from 2009 onwards)

M.Sc. DEGREE EXAMINATION, MAY 2014.

First Year

Botany

BRYOPHYTES, PTERIDOPHYTES AND GYMNOSPERMS

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

Draw diagrams wherever necessary.

(5 × 20 = 100)

1. Explain the range of sporophytes seen in Bryophytes.

2. (a) Write an account on seed evolution in pteridophytes. (10)

   (b) Explain the concept of Heterospory and seed habit in pteridophytes. (10)

3. (a) Give an account on the classification of pteridophytes by Reimer. (10)

   (b) Explain the morphological features of sporophytes and gametophytes of psilotum. (10)

4. Explain the external features and affinities of pteridospermales.

5. (a) Write an account on the Angiospermic characters of Gnetales.

   (b) Explain the structure of male and female strobilus of Gnetum.

6. (a) Give an account on fossil Bryophytes.

   (b) Discuss the economic importance of Bryophytes.

7. (a) Explain the stelar evolution in pteridophytes.

   (b) Describe the sporocarp of Salvinia.

8. Explain the external features and inter – relationships of Pentoxylales.

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Reg. No. : .....

D 2155 **Q.P. Code : [D 09 PBO 03]**

(For the candidates admitted from 2009 onwards)

M.Sc. DEGREE EXAMINATION, MAY 2014.

First Year

Botany

GENETICS, PLANT BREEDING AND BIOSTATISTICS

Time : Three hours Maximum : 100 marks

Answer any FIVE questions from the following.

(5 × 20 = 100)

1. Discuss the molecular basis of mutation, physical and chemical mutagens and their mode of action. (20)

2. Write an essay on Sex determination in biological system and Non disjunction. (20)

3. Write an essay on the organization of (a) mitochondrial DNA and (b) extrachromosomal inheritance. (10+10)

4. Describe the methods of plant breeding. How do these methods help improve yield, quality and resistance to diseases and pests? (20)

5. What is meant by IPR? Discuss the rights of plant breeders and biotechnologists. (20)

6. Compute the following:

   (a) A survey of 320 families with 5 children each revealed the following distribution.

No. of boys:	5	4	5	2	1	0
No. of girls:	0	1	2	3	4	5
No. of families:	14	56	110	88	40	12

   Is the result consistent with the hypothesis that the male and female births are equally probable? (10)

   (b) Two groups of 100 people each were taken for testing the use of vaccine 15 persons contracted the disease out of the inoculated persons, while 25 contracted the disease in the other group. Test the efficiency of vaccine using ψ^2—test. (10)

7. Write an essay on the principle and practice of statistical methods in Biological research. (20)

8. Give an account on the following and add note on its biological applications

   (a) Mean (5)

   (b) Median (5)

   (c) Mode (5)

   (d) Histogram. (5)

Reg. No. : .....

D 2156 **Q.P. Code : [D 09 PBO 04]**

(For the candidates admitted from 2009 onwards)

M.Sc. DEGREE EXAMINATION, MAY 2014.

First Year

Part III — Botany

CELL AND MOLECULAR BIOLOGY

Time : Three hours Maximum : 100 marks

Answer any FIVE of the following.

All questions carry equal marks.

(5 × 20 = 100)

1. Describe the structure, function and origin of Golgi apparatus. (20)

2. Write an account on properties, layers, composition and formation of plant all walls. (20)

3. Differentiate the meiosis and mitosis cell division and elaborate Meiosis I in reproductive process. (20)

4. Write an account different types of DNA replication process. (20)

5. Explain the structure and functions of Ribosome with reference to protein synthesis process. (20)

6. Explain the principle and mechanism of Electron microscope. (20)

7. Give an account on the structure and function of Eukaryotic nucleus. (20)

8. Explain the following:

   (a). DNA as genetic material (15)

   (b) DNA dependent RNA. (5)

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D 2157 **Q.P. Code : [D 09 PBO 05]**

(For the candidates admitted from 2009 onwards)

M.Sc. DEGREE EXAMINATION, MAY 2014.

First Year

Part III — Botany

ANATOMY, EMBRYOLOGY AND TISSUE CULTURE

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

Draw Diagram Wherever necessary.

(5 × 20 = 100)

1. Explain the various types of Anomalous secondary thickening seen in Angiosperms. (20)

2. Write notes on the following

   (a) Diffuse and porous wood. (5)

   (b) Dendrochronology. (5)

   (c) Compression wood and tension wood. (5)

   (d) Sap wood and Heart wood. (5)

3. Explain the following.

   (a) Pollen wall morphosgenesis. (5)

   (b) Pollen stigma compatibility. (10)

   (c) Nutrition of Embryosac. (5)

4. Briefly explain the following

   (a) Double fertilization and triple fusion. (10)

   (b) Apomixes. (5)

   (c) Parthenocarpy. (5)

5. Explain the following.

   (a) Protoplast culture. (10)

   (b) Meristem culture. (10)

6. Discuss the following.

   (a) Meristems. (10)

   (b) Leaf ontogeny in Dicot plants. (10)

7. Explain the structure, function of secondary Xylem. Add a note on its ontogeny. (20)

8. Give an account on the development of Dicot embryo. (20)

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