ED-314

M.Sc. 1st Semester
Examination, March-April 2021

BOTANY

Paper - I

Cytology

Time : Three Hours] [*Maximum Marks* : 80

Note : Answer **all** questions. All questions carry equal marks.

Unit-I

1. Write a note on cell wall.

OR

Write notes on any **two** of the following :

(*a*) Ion carriers

(*b*) Site for ATPase

(*c*) Bilayer model of plasma membrane

Unit-II

2. Write a note on gene expression of chloroplast.

OR

Write notes on any **two** of the following :

(*a*) ATPases

(*b*) Genome organisation of mitochondrion

(*c*) RNA editing

Unit-III

3. Write a note on mitosis and meiosis.

OR

Write notes on any **two** of the following :

(*a*) Structure of nuclear pore

(*b*) Ribosome functional significance

(*c*) Structure of nucleus

Unit-IV

4. Write a note on in situ hybridization.

OR

Write notes on any **two** of the following :

(*a*) Golgi apparatus

(*b*) Electron microscope

(*c*) Microbodies

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ED-315

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Paper - II

Genetics

Time : Three Hours] [*Maximum Marks* : 80

Note : Answer **all** questions. All questions carry equal marks.

Unit-I

1. Explain the Karyotype and idiogram.

OR

Write short notes on any **two** of the following :

(*a*) Centromere

(*b*) Ribosomal RNA Genes

(*c*) Lampbrush chromosome

Unit-II

2. Write an essay on molecular basis of chromosome pairing.

OR

Write short notes on any **two** of the following :

(*a*) Bacteriophage genome

(*b*) Transformation

(*c*) Polyploidy

Unit-III

3. What is linkage ? Explain its mechanisms.

OR

Write short notes on any **two** of the following :

(*a*) Genetic mapping

(*b*) Site specific recombination

(*c*) Tetrad analysis

Unit-IV

4. Write an essay on plant breeding techniques.

OR

Write short notes on any **two** of the following :

(*a*) Mutation

(*b*) Heterosis

(*c*) Alien gene

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ED-316

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Paper - III

Microbiology, Phycology and Mycology

Time : Three Hours] [*Maximum Marks* : 80
[*Minimum Pass Marks* : 16

Note : Answer **all** questions. All questions carry equal marks.

Unit-I

1. Give general account and ultrastructure of Eubacteria.

OR

Write notes on the following :

(*a*) Biological importance of Cyanobacteria

(*b*) Economic importance of Archaebacteria

Unit-II

2. Write an essay on viral replication.

OR

Write notes on the following :

(*a*) Phytoplasma

(*b*) Transmission of viruses

Unit-III

3. Give an account of diversified distribution of algae in different habitats.

OR

Write notes on the following :

(*a*) Algal pigments

(*b*) Classification of chlorophyta and xanthophyta

Unit-IV

4. Describe reproduction in fungi.

OR

Write notes on the following :

(*a*) VAM fungi

(*b*) Fungi as biocontrol agent

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ED-317

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Paper - IV

Bryophyta, Pteridophyta and Gymnosperms

Time : Three Hours] [*Maximum Marks* : 80
[*Minimum Pass Marks* : 16

Note : Answer **all** questions. All questions carry equal marks.

Unit-I

1. Give a comparative account of the sporophytes of Marchantia, Anthoceros and Funaria.

OR

Write notes on the any **two** of the following :

(*a*) Vegetative reproduction in Bryophytes

(*b*) Spore dispersal mechanism in Bryophytes

(*c*) Sporophyte of Polytrichum

Unit-II

2. What are Stele ? Describe the evolution of stele in Pteridophytes ?

OR

Write notes on any **two** of the following :

(*a*) Concept of first vascular plants

(*b*) Structure of mature archegonium of psilotum

(*c*) Prothallus organization in pteridophytes

Unit-III

3. Gymnosperms are a connecting link between angiosperm and pteridophytes ? Explain it.

OR

Write notes on any **two** of the following :

(*a*) Distribution of Gymnosperm in India

(*b*) Classification of Gymnosperm

(*c*) Endosperm in Gymnosperm

Unit-IV

4. Give an account on the affinities of Gnetum and show how it is closely related to Angiosperm.

OR

Write notes on any **two** of the following :

(*a*) Account of Glossopteris

(*b*) Female cone of Pinus

(*c*) Male strobillus of Welwitschia

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