

Enrollment No.....

Master of Science (Botany)
Third Semester Main Examination, Dec-2020
Cytogenetics & Genetics [MSB303T]

Time: 3:00 Hrs

Max Marks 85

Note: Attempt all questions.
All questions carry equal marks.

- Q.1 Write short notes on:-
(a) Bacteriophage
(b) Conjugation
OR
What is genetic transformation? Describe it.
- Q.2 Somatic cell genetics-An alternative approach to gene mapping. Describe it.
OR
Write short notes on:-
(a) Genetic mapping
(b) Linkage groups
- Q.3 What is DNA damage? Explain it.
OR
Describe physical and chemical mutagens.
- Q.4 Describe the effect of aneuploidy on phenotype in plants.
OR
What is structural heterozygote? Explain it
- Q.5 What is Cot Curve? Write its significance.
OR
Describe the hybrid vigour in brief.

Enrollment No.....

Master of Science (Botany)
Third Semester Main Examination, Dec-2020
Molecular Biology of Plants [MSB304T]

Time: 3:00 Hrs

Max Marks 85

Note: Attempt all questions.
All questions carry equal marks.

- Q.1 Explain plant promoters. Describe in detail.
OR

Write short notes on: - (Any two)

- (c) DNA Damage
- (d) Z structure
- (e) Messenger RNA

Q.2 Explain interons and their significance

OR

Write short notes on:-

- (a) RNA splicing
- (b) Cis-trans test
- (c) Difference between prokaryotes & Eukaryotes

Q.3 Describe the Mechanism of Translocation.

OR

Describe the transfer RNA with structure and functioning.

Q.4 Describe the mechanism of programmed cell death.

OR

Write short notes on: - (Any two)

- (a) E2F protein
- (b) retinoblastoma
- (c) cyclins

Q.5 Explain in situ hybridization. Give its techniques.

OR

Write short notes on: - (Any two)

- (a) Confocal microscopy
- (b) FISH
- (c) Flow cytometry

Enrollment No.....

Master of Science (Botany)
Third Semester Main Examination, Dec-2020
Plant Biochemistry & Metabolism [MSB302T]

Time: 3:00 Hrs

Max Marks 85

Note: Attempt all questions.

All questions carry equal marks.

Q.1 Explain the Michaelis-Menten equation and its significance.

OR

Describe the mechanism of enzyme action.

Q.2 Describe the Biosynthesis of starch and sucrose.

OR

Write short notes on:-

- (f) Photorespiration
- (g) Calvin cycle

Q.3 Draw the cycle of Glycolysis and explain it.

OR

Describe pentose phosphate pathway.

Q.4 Describe the structure and function of lipid.
OR
What are fatty acids? Explain fatty acid Biosynthesis.

Q.5 Describe the Biological Nitrogen Fixation.
OR

Write short note on:-

- (i) Nodule formation
- (ii) Nod factors.

Enrollment No.....

Master of Science (Botany)
Third Semester Main Examination, Dec-2020
Plant Physiology [MSB301T]

Time: 3:00 Hrs

Max Marks 85

Note: Attempt all questions.
All questions carry equal marks.

Q.1 What do you mean by thermodynamics?
OR
Describe the plant water relations.

Q.2 Explain sucrose sensing mechanism.
OR
Write short notes on:-
(h) Cyclic nucleotides
(i) Calcium- Calmodulin Cascade

Q.3 Explain the physiological effects of auxins and gibberlins.
OR
Describe Hormone receptors? Explain how it works.

Q.4 What is phytochromes and cryptochromes? Write its biological properties.
OR
Explain the role of vernalization.

Q.5 What is water deficit and drought resistance? Explain it.
OR
Explain salinity stress? Describe it.