M. Sc. Botany – Third Semester
Course PG 303: Genetics & Cytogenetics

Answer the following questions.

Q1. Write short note on the following:
   (i) Transduction
   (ii) Cytoplasmic male sterility

Q2. Describe the molecular mechanism of recombination.

Q3. Write a detailed note on DNA damage and repair mechanisms.

Q4. Discuss the structural changes of chromosomes.

Q5. Write short note on the following:
   (i) c-value paradox
   (ii) Restriction mapping
Answer the following questions.

Q1. Write short note on the following:
   (i) B-DNA
   (ii) m-RNA

Q2. Discuss regulation of gene expression in prokaryotes in detail.

Q3. Describe the structure and role of transfer RNA.

Q4. Give a detailed account on DNA replication in prokaryotes.

Q5. Write short note on the following:
   (i) FISH
   (ii) Flow cytometry
M. Sc. Botany – Third Semester
Course PG 302: Plant Biochemistry & Metabolism

Answer the following questions.

Q1. Discuss the Michaelis- Menten equation and its significance.

Q2. Write a detailed note on mechanism of electron and proton transport in photosynthesis.

Q3. Describe TCA cycle in detail.

Q4. Write a note on fatty acid biosynthesis.

Q5. Describe the biological nitrogen fixation with suitable diagrams.
Course PG 301: Plant Physiology

Answer the following questions.

Q1. Describe various root-microbe interactions in facilitating nutrient uptake in plants.

Q2. Write a detailed account on signal transduction in plants.

Q3. What are auxins? Describe their physiological effects and mechanism of action.

Q4. Write short notes on the following:
   (i) Photoperiodism
   (ii) Phytochromes

Q5. Discuss the plant responses to water deficit and drought resistance.