**MEERUT INSTITUTE OF ENGINEERING AND TECHNOLOGY**

**Department of Biotechnology and Microbiology**

NH-58, Delhi-Roorkee Highway, Baghpat Road, Meerut – 250 005 U.P.

**Question Bank for Main Exam**

**Subject Name – Cell Reproduction and Differentiation**

**Q-1** Describe in brief various stages of cell cycle.

Q-2 What are the chemical components of chromosomes.

Q-3 Describe the types of histones and their organization in a nucleosome.

Q-4 Write a note on organization of Kinetochore.

Q-5 Compare the steps of differentiation in plants and animals.

Q-6 Describe the events during various phases of cell cycle.

Q-7 Discuss cell division with respect to meiosis and its significance.

Q-8 Describe the morphology of chromosomes on the basis of size, shape and number.

Q-9 Difference between Heterochromatin and Euchromatin.

Q-10 Difference between Polytene and Lampbrush chromosomes.

Q-11Describe meiosis only with the help of well labelled diagram? Explain its significance.

Q-12 What is the cell differentiation? Describe the significance of cell differentiation.

Q-13 Explain cell functions.

Q-14 Explain cell cycle.

Q-15 How signals are heard during bacterial chemotaxis.

Q-16 Define following term

1. Laptotene
2. Pachytene
3. Telomere

Q-17 What is nucleosome? Explain the packaging of DNA Helix? Draw the labelled diagram of nucleososme?

Q-18 What are the four major cell adhesion molecules?

Q-19 Short note on Synaptonemal complex.

Q-20 Describe the morphology of chromosome on the basis of size, shape and number.

Q-21 Short note on Bacterial chemotaxis.

Q-22 Discuss cell division with respect to meiosis and its significance.

Q-23 Describe the events during various phases of cell cycle.

Q-24 Short note on Desmosomes.

Q-25 Short note on Cell adhesion.

Q-26 Difference between tight junction and gap junction.

Q-27 Difference between Meiotic metaphase – I and mitotic metaphase.

Q-28 Describe the chemical composition and structural organization of chromatids.

Q-29 Describe and diagrammatically explain Centrioles.

Q-30 Describe the intercellular recognition and cell adhesion.

Q-31 What do you mean by signal hypothesis? Explain chemotaxis in bacteria.

Q-32 Compare mitosis with meiosis using suitable illustration.

Q-33 Discuss characteristic structure and divisional patterns of cancer cells. Differentiate cancer cells from normal cells.

Q-34 Describe cell differentiation in plants.

Q-35 Describe cell differentiation in animals.

Q-36 Differentiate between chromatids and chromosomes.

Q-37 Differentiate between Nucleosome and centrosome.

Q-38 Differentiate Between Acrocentric and Metacentric chromosomes.

Q-39 Describe cell cycle with emphasis on interphase using suitable example.

Q-40 Differentiate between normal cell and cancer cell.

Q-41 Differentiate between mitosis and meiosis.

Q-42 Differentiate Chromomere and centromere.

Q-43 Differentiate between Metaphase I and II of Meiosis with suitable illustration.

Q-44 Describe the structural organization of Chromatids.

Q-45 Differentiate between plat and animal cell.

Q-46 Write a short note on iron transport across cell junction.

Q-47 Discuss regulation of cell differentiation.

Q-48 Explain structure of chromosome.

Q-49 Describe polytene chromosomes with diagram.

Q-50 Describe Lampbrush chromosomes with diagram.