B Sc I Year I Semester-Question Bank

Subject: Cell biology and Genetics
Group: Mb Bt C

UNIT-1 : Cell structure and Function

Essay questions:

1. Describe in detail the ultra structure of Eukaryotic cell.

2. Describe in detail the ultra structure of Prokaryotic cell.

3. Write an essay on chromosomal aberrations.

4. Describe in detail about special type of chromosomes.

Short questions:

1. Bacterial and Fungal cells

2. Chloroplast, Endoplasmic reticulum

3. Fluid mosaic and sandwich model

4. Histone and non-Histone proteins

5. Inversions and Translocations

Unit-2: Cell cycle

Essay questions

1. Explain about Transformation, Transduction and Conjugation.

2. Define cell division and explain about Mitosis.

3. Discuss in detail about different stages of Meiosis.

4. Write an essay on Apoptosis.

Short questions:

1. Significance of Synaptonemal complex

2. Senescence and Necrosis

3. Metaphase of Mitosis

4. Binary fission

Unit-3: Principles and mechanism of inheritance

Essay questions

1. Explain Mendel's laws of inhreritance in detail.

2. Describe Multiple allelism with examples.

3. Describe the process of sex determination in Drosophila, Bonelia & in man.

4. Write an essay on X-linked inheritance with examples.

Short questions:

1. Incomplete and Co-dominance

2. Epistasis and its types

3. Penetrance and expressivity

4. Holandric genes

5. Pleiotropism

6. Cleft lip

Unit-4: Linkage, Recombination and Extension to Mendel's Laws

Essay questions

1. Discuss about Stern's experiment (or) explain about cytological basis of crossing over.

2. Describe in detail about Non –Mendelian inheritance.

3. Explain mitochondrial inheritance in human and in poky Neurospora crassa.

Short questions:

1. Phases of linkage

2. Maternal effect

3. Chloroplast inheritance in Clamydomonas

4. Hardy-Weinberg equilibrium

5. Cytoplasmic male sterility in Maize and Paramecium