

COURSE CODE	COURSE TITLE	C	H	I	E	T
17U4ZMC4	CELL & MOLECULAR BIOLOGY	2	2	25	75	100

OBJECTIVES

- ❖ To understand and explore cell structure and functions.
- ❖ To understand the molecular structure & functions of cellular components and its biological importance.

LEARNING OUTCOME

1. Adopting knowledge in cell structures and molecular functions will be useful in getting jobs in pharma companies.
2. Waves path for self employment.

UNIT: I

Microscopy – Principles of light and electron microscope. Plasma membrane: Ultra structure – Chemical composition and functions.

UNIT: II

Endoplasmic reticulum: morphology, structure, types and functions. Golgi complex: morphology, structure, types and functions. Mitochondria: structure, chemical compositions & functions. Nucleus: structure and functions.

UNIT: III

Chromosomes: Structure of chromosome, Giant chromosomes, Chromosomal aberrations.
Cancer cells, cell aging, Apoptosis.

UNIT: IV

Nucleic acids: Structure, types and functions of DNA & RNA, replication.

UNIT: V

Protein synthesis: Transcription, Translation (Activation of amino acids, Initiation, Elongation & Termination of polypeptide chains), Lac operon, Central Dogma of Molecular Biology.

TEXT BOOKS

1. Verma, S. and Agarwal, V.K. 2000 – Cytology, S. Chand & Co- New Delhi.
2. Gupta P.K .2003. Cell and Molecular Biology, IInd Edition, Rastogi Publication, India

REFERENCE BOOKS

1. Karp, G.(2010). Cell and Molecular Biology: Concepts and experiments. VI Edition. John Wiley and Sons.Inc.
2. Cooper, G. M and Hausmen, R.E (2009). The Cell: A Molecular Approach. V Edition. ASM Press and Sunderland, Washington.D.C,: Sinauer Associates, MA.
3. Balinsky, B.I., 1981. An Introduction to Embryology, Holt Saunders, New Yo rk.
4. Berrill, N.J., 1986. Developmental Biology, Mc Graw Hill, New Delhi.
5. De Robertis, E. D. P., 2010. Cell and Molecular Biology, Lippincott Williams & Wilkins.