

# Bankura Christian College

## Department of Physiology

1<sup>st</sup> YEAR: SEMESTER-I (Academic Session: 2023-24)

Course Code: S/PHY/102/MN-1

Course Id: 12512

Credit- 03; Full Marks: 35

Classes: 12(Lecture)+03(Class test/Revision)

Course Title: Cellular Physiology

Dr Rajkumar Maiti

### Course Learning Outcomes:

1. This course gives a wide knowledge about structure and functions of cell organelle.
2. From this course students will gather the knowledge about the cell, tissue, organ and systems.
3. The course would fortify to the students to acquire the knowledge about transport across cell membranes and intracellular communications.
4. They acquire a concept about cell cycle, cell division, homeostasis and aging process.

### Topics Allotted

1. Structure and function of cell organelle – Plasma membrane, nucleus, mitochondria, ribosome, lysosome, Golgi body, endoplasmic reticulum, peroxisomes, cytoskeletal elements and centrosomes.
2. Transport across cell membranes - Active, passive, carrier mediated, antiport and symport.

MONTH/YEAR	WEEK	PORTIONS
August 2023	2	Introduction to cell
	3	Component and structure of cell membrane Singer and Nicolson Fluid mosaic model
	4	Function of plasma membrane. Cytoplasm and basic ideas on cell organelles
	5	EM structure and function of nucleus
MONTH/YEAR	WEEK	PORTIONS
September 2023	1	EM structure and function of mitochondria
	2	EM structure and function of Golgi body, ribosome and lysosome
	3	EM structure and endoplasmic reticulum and peroxisomes
	4	<b>Class test on above mention topics</b>
MONTH/YEAR	WEEK	PORTIONS
October 2023	1	Structure and function of cytoskeletal elements and centrosomes
	2	Structure and function of uniport, symport and antiport
MONTH/YEAR	WEEK	PORTIONS
November 2023	1	Transport across cell membranes
	2	Structure and function of active and passive transport
	3	Structure and function of passive transport
	4	<b>Class test: Cellular Basis of Physiology</b>
MONTH/YEAR	WEEK	PORTIONS
December 2023	1	<b>Revision on Cellular Basis of Physiology</b>

### Suggested Books

1. Mahapatra, A.B.S.M. (2011).Essentials of Medical Physiology Practical. First Edition. Current Books International.
2. Hall J.E. (2016).Guyton & Hall Textbook of Medical Physiology. Second South Asia Edition.
3. Sembulingam K. and Sembulingam, P. (2016). Essentials of Medical Physiology 7<sup>th</sup> Edition. Jaypee.
4. Khurana I. (2015). Medical Physiology. 2<sup>nd</sup> Edition. Elsevier India.
5. Chatterjee C.C. (2016).Human Physiology Volume 1. Eleventh Edition. CBS. Publishers and Distributers Pvt. Ltd.

Rajkumar Maiti