Roll No:

BPHARM

(SEM VIII) THEORY EXAMINATION 2021-22

CELL AND MOLECULAR BIOLOGY

TIME: 3 HRS M.MARKS: 75

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

Attempt all questions in brief. 10 x 2 = 20

a.	Classify RNA with their functions.
b.	Define meiosis.
c.	Define G2 phase of cell cycle.
d.	Write the functions of smooth endoplasmic reticulum.
e.	Write a note on nucleopore.
f.	Define transcription.
g.	Define genetic code.
h.	Define cell signaling.
i.	Define essential amino acids with examples.
j.	Write some chemical properties of proteins.

SECTION B

empt any two parts of the following: 2 x 10 = 20

a.	Describe the process of mitosis.
b.	How protein is synthesized in cell? Write the regulation of protein synthesis.
c.	Make a diagram of plasma membrane, write the channels present in plasma membrane.

SECTION C

empt any five parts of the following: 7 x 5 = 35

a.	Write a note on protein folding.
b.	Describe G1 (Restriction checkpoint).
c.	Give the structure of prokaryotic cell; write the advantages of prokaryotic cells.
d.	Describe cellular reproduction.
e.	Write the historical background of molecular biology.
f.	Write the properties of DNA.
g.	Write the principle and applications of transgenic animals.

Printed Pages: 01 Sub Code: BP-808ET

Paper Id: 232118 Roll No.

B PHARM
(SEM VIII) THEORY EXAMINATION 2022-23
CELL AND MOLECULAR BIOLOGY

Time:3 Hours ***Total Marks: 75***

Note: Attemptall Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a. Differentiatebetween prokaryotic and eukaryotic cell.
b. Define transgenic animals.
c. Classify various types of RNA.
d. Enlist the function of tRNA and rRNA.
e. Define centromere and genome.
f. What are chaperones?
g. Define genetics.
h. Write the functions of microtubules.
i. Enlist types of G-protein involved in cell transduction signaling.
j. Differentiate between active and passive transport across cell membrane.

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a. Draw a well labelled diagram of eukaryotic cell. Enumerate the functions of Golgi bodies and Endoplasmic reticulum.
b. Explain the cell cycle in detail. Highlight the check points in cell cycle.
c. Discuss the GPCR mechanism of cell signaling.

SECTION C

3. Attempt any *five* parts of the following: **5 x 7 = 35**

a. Explain the types ofcellular reproduction in prokaryotes and eukaryotes.
b. Summarize the process of protein synthesis.
c. Discuss the fluid mosaic model of cell membrane.
d. Write a detailed note on structure and types of proteins.
e. Discuss the Central Dogma of molecular biology.
f. Describe the different phases of mitosis and their significance in cell division.
g. Discuss the types and function of protein kinases.

PAPER ID-310926

SubjectCode: BP808ET

Roll No: | | | | | | | | | | | | | |

BPHARM
(SEM VIII) THEORY EXAMINATION 2023-24
CELL AND MOLECULAR BIOLOGY

TIME: 3 HRS **M.MARKS: 75**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Define the cellwith example.
b.	Enlist two functions of cell membrane.
c.	Discuss the reverse transcription process.
d.	Classify the types of RNA.
e.	Explain the protein synthesis process.
f.	Write the differences between essential and nonessential amino acids.
g.	Define the Transgenesis.
h.	Write the differences between mitosis and meiosis.
i.	Define 'receptor'.
j.	Enlist types of G-proteininvolvedin the cell signaling.

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a.	Writethe differencesbetween Prokaryotic and Eukaryotic cell with well labelleddiagram.Give the functions of Mitochondria and Endoplasmic reticulum.
b.	Describe the cell signaling pathways along with details of GPCR mechanism pathway.
c.	Explain the cell cycleand cellular activities and discuss the checkpoints of cell cycle.

SECTION C

3. Attempt any *five* parts of the following: **5 x 7 = 35**

a.	Explain the cellular reproductionin Prokaryotic and Eukaryotic cell.
b.	Elaborate various types of chemical foundations with examples.
c.	Discuss the central dogma of molecular biology and functions of DNA.
d.	Describe the structure and types of proteins and significance of protein synthesis.
e.	Write the various models of plasma membrane and describe the Fluid Mosaic model.
f.	Describe various phases of meiosis and their significance in cell division.
g.	Illustrate the types and functions of Protein-kinases.

Paper ID : 250364

Roll No: | | | | | | | | | | | | | |

BPHARM
(SEM VIII) THEORY EXAMINATION 2024-25
CELL AND MOLECULAR BIOLOGY

TIME: 3 HRS **M.MARKS: 75**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	What is DNA replication?
b.	What is protoplasm theory?
c.	Difference between translation and transcription.
d.	What is the primary function of protein kinases in cell signaling pathways?
e.	What is the basic unit of heredity in genetics? At which checkpoint does the cell verify DNA replication before entering mitosis?
f.	State two main functions of the cell membrane.
g.	Name and define two types of chemical reactions important in cellular processes.
h.	Name the four levels of protein structure and which level determines the protein's final 3D shape.
i.	What are the two types of RNA involved in protein synthesis? What is their role?
j.	Define gene mutation.

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a.	Define cell division. Describe the phases of mitosis and meiosis with labeled diagrams. Also, differentiate between mitosis and meiosis.
b.	Define cell signaling and cell signaling pathways. Describe the signal transduction mechanisms of signaling receptors and explain the key steps involved in a typical signaling pathway, highlighting its biological significance.
c.	Define RNA and classify its types. Describe the structure, composition, and functions of different types of RNA, and explain the process of RNA biosynthesis and translation.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a.	Describe the structure and functions of the cell membrane. Differentiate between active and passive transport, and explain the mechanisms involved in each process.
b.	Differentiate between Prokaryotic and Eukaryotic cells.
c.	What is the chromosomal theory of inheritance? Discuss its main principles and significance in understanding genetic inheritance.
d.	Discuss the various applications of cell and molecular biology in fields such as medicine, agriculture, and biotechnology.
e.	Describe the structure of proteins, outlining the four levels of protein structure and explaining how each level contributes to the protein's overall function.
f.	What is the function of regulatory genes, and how do they influence gene expression in cellular processes?
g.	Discuss various genomic analysis techniques.

PAPER ID-311143

Roll No:

Subject Code: BP808ET

BPHARM
(SEM VIII) THEORY EXAMINATION 2025-26
CELL AND MOLECULAR BIOLOGY

TIME: 3 HRS **M.MARKS: 75**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Define genetics.
b.	Whatarethe functionsofDNA?
c.	What do you mean by transgenic?
d.	Give a suitable example to illustrate how RNA works.
e.	Enlist the function of tRNA and rRNA.
f.	Distinguish between mitosis and meiosis.
g.	Distinguish between prokaryotes and eukaryotes.
h.	Give brief introduction of molecular biology.
i.	Differentiate between active and passive transport across cell membrane
j.	Write the properties of cells.

SECTION B

2. Attempt any *two*parts of the following: **2 x 10 = 20**

a.	Explain the cell cycleanalysis in detail. Highlight the check points in cell cycle.
b.	Describe the characteristics of the cell membrane and cellular reproduction in details.
c.	Describe the cell signals and explain the receptors for cell signals

SECTION C

3. Attempt any *five*parts of the following: **7 x 5 = 35**

a.	Discuss the types and function of protein kinase.
b.	What about the translation and transcription?
c.	Discuss DNA and the transfer of molecular information.
d.	Describe the importance of protein synthesis and the positive control.
e.	Review the protein pathway's regularities.
f.	Discuss the GPCR mechanism of cell signaling.
g.	What different cellular activities are there? Describe each checkpoint