REV-01 BMB/01/04

B.Sc. MICROBIOLOGY THIRD SEMESTER (SPECIAL REPEAT) **CELL BIOLOGY BMB-302**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Objective)

Time: 30 mins.

Full Marks: 70

Marks: 20 $1 \times 20 = 20$

2023/08

SET

Choose the correct answer from the following:

a. Cytoplasm

1. Which of the following organelle takes part in protein sorting? b. Ribosomes

c. ER compartments

d. Golgi apparatus

Identify the secretory organelle from the following:

a. Endoplasmic Reticulam

b. Golgi

c. Nucleus

d. Ribosome

Microfilaments are composed of a protein called:

a. Tubulin

b. Actin

c. Myosin 4. Which of the following is the largest single membrane-bound intracellular compartment?

d. Chitin

b. Golgi Apparatus

a. Ribosome c. Nucleus

c. Nucleus

d. Endoplasmic Reticulum

5. Which among the following does not contain genetic material?

a. Mitochondria

b. Chloroplast d. Lysosome

Plasma membrane is made up of:

a. A protein, a lipid and a cellulose layer

c. A protein layer between two lipid layers

d. A lipid layer between two protein layers

7. The following sentence is true about cellular theory: a. It's not applicable to virus

b. It's not applicable to fungi

b. Bimolecular lipid layer embedded by protein

c. It's not applicable to bacteria

d. It's not applicable to algae

Human cell differs from plant cells in possessing:

a. Vacuole

b. Golgi

c. Cell wall

d. Peroxisomes

9. The jelly like substance present inside the cell is known as:

a. Nucleoplasm

b. Cytoplasm

c. Ectoplasm

d. All of the above

10. Which among the following are not correct about Collagen?

a. Trimer of glycoproteins

b. Monomer of glycoproteins

c. Polymer of glycoprotein

d. Dimer of glycoprotein

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11.	At which cell cycle checkpoint, cell cycle is ha. $G_1 - S$	alted if cell's DNA is damaged: b. S - G ₂
		d. G ₀ - G ₁
12.	class of ribosome attached to the ER	 best explained by which of the following? b. Addition of a common sorting signal to each type of protein after completion of synthesis
	 Addition of oligosaccharides to all three types of proteins 	 d. Presence of a signal sequence that targets each type of protein to the ER during synthesis
13.		tor. b. Ion-Channel receptor d. Nuclear receptor
14.	move in	k pump is used?b. Both Na and K+ ions move inside the celld. K+ ion moves out of cell and Na ion
15.		move in in found in Nuclear pore complex? b. Nuclear importin d. Karyherins
16.		nt? b. Primary active transport d. Passive transport
17.		ng, except: b. Programmed cell death d. Post-transcription modifications
18.		b. RNAs and glycolipdsd. RNAs and lipid
19.		tatic and are required throughout the cell b. G1/S Cyclin d. G1 Cyclin
20.		ronectin involves active site: b. Valine, isoleucine, arginine d. Arginine, glycin, aspartic acid
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Descriptive

Time: 2 hr. 30 mins. Marks: 50 [Answer question no.1 & any four (4) from the rest] 1. Illustrate the function of mitochondria, golgi and ribosome of fungal 10 cell with appropriate diagram. a) Explain the contributions of cyclin proteins in cell cycle. 6+4=10 b) Elaborate the mechanism of transport across the plasma membrane. 3. a) Explain the significance of phase I in cell cycle. 3+7=10 b) What are the regulatory checkpoints of cell cycle? 4. a) Where does ATP synthesis takes place and how? 7+3=10 b) What do you mean by endosymbiotic theory? a) Explain how tumour suppressor gene prevents the growth of cancer 6+4=10 b) Explain the important feature of cancer causing genes. 6. a) How mitochondria is associated with ATP synthesis. Explain with 6+4=10 suitable diagram. b) Which cellular organelles are associated with controlling the cell? Justify your answer. 7. a) What are the major difference between microtubules, microfilaments 6+4=10 and intermediate filaments? b) Discuss the significance of molecular motor in muscle contraction.

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a) Explain the function of lysosome and peroxisome.

b) Explain briefly Sodium Glucose transport system.

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4+6=10