G-1/151/22

Roll No. .....

I Semester Examination, January 2022

M.Sc.

BIOTECHNOLOGY

Paper I

(Basics of Biotechnology and Cell Biology)

Time : 3 Hours] [Max. Marks : 80

Note : *All questions are compulsory. Question Paper comprises of 3 Sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.*

SECTION A **1×8=8**

(Objective Type/Multiple Choice Questions)

Choose the correct answer :

1. Positive Pressure Personal suite, arilock entry and disinfectant shower is essential in which level of safety :

(a) BSL-1

(b) BSK-2

(c) BSL-4

(d) None of the above.

P.T.O.

2. Which is/are essential in laboratory concern to Biosafety ?

(a) Protective eye wear (b) Laminar Air Flow

(c) Fist aid (d) All of these.

3. Who is not involved in cell theory ?

(a) Mattias Schleiden (b) Theodor Schwann

(c) Robert Hook (d) Rudolf Virchow.

4. Which phospholipid is/are found in plasma membrane ?

(a) Phosphatidylcholine

(b) Phosphatidylserine

(c) Phosphatidylethanolamin

(d) All of the above.

5. "START" checkpoint found in the cell cycle of :

(a) Algae (b) Yeast

(c) Drosophilla (d) Frog.

6. Which organelle is mainly involved in Apoptosis ?

(a) Endoplasmic reticulum

(b) Chloroplast

(c) Mitochondria

(d) Golgi body.

7. Sperm tail is made up of :

(a) Actin Fiber (b) Microtubule

(c) Microfilament (d) Neurones.

8. Ribosomal RNA synthesis occurs in :

(a) Mitochondria (b) Cytoplasm

(c) Nucleolus (d) Endoplasmic reticulum.

SECTION B **6×4=24**

(Short Answer Type Questions)

Note : *Give answer in* **250** *words.*

Unit-I

1. Give brief history at Biotechnology.

Or

Suggest safety measures for the handing of chemicals in laboratory.

Unit-II

2. Explain the structure, types and function of phospolipid present in Plasma membrane.

Or

What are the biological significance at Nucleolus.

Unit-III

3. Describe Anaphase stage of cell division with suitable diagram.

Or

Explain cyclic dependent regulation.

Unit-IV

4. Describe signaling receptor.

Or

Explain translation elongation.

SECTION C **12×4=48**

(Long Answer Type Questions)

Note : *Give answer in* 500 *words.*

Unit-I

1. List the appratus and their uses of biotechnological laboratories.

Or

Write short notes on the following :

(a) Lab coat

(b) Fire safety in Laboratories.

Unit-II

2. Explain Transport across the membrane.

Or

Describe chemical composition and biological significance of Ribosomes.

Unit-III

3. Describe Apoptosis triggered by external signals.

Or

Draw the structure of microtubules and explain its biological role.

Unit-IV

4. Explain Oogenesis with suitable diagram.

Or

Describe any *one* signaling pathway.

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