REV-01
MSB/75/80

2023/06

SET C

M.Sc. BOTANY
SECOND SEMESTER
CELL BIOLOGY
MSB-205

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1hr. 30 mins. Full Marks: 35

Objective

Time: 15 mins. Marks: 10

Choose the correct answer from the following: ***1×10=10***

1. The plasma membrane is impermeable to all except:
   a. Glucose b. ATP
   c. Urea d. K^+

2. Who first discovered plasma membrane?
   a. Singer and Nicholson b. Jacod and Monod
   c. Hardy Weinburg d. Watson and Crick

3. Which of the following microscope is best suited for observing live specimens without staining?
   a. Compound microscope b. Phase contrast microscope
   c. Fluorescence microscope d. TEM

4. The control center of the eukaryotic cell:
   a. Nucleus b. Ribosome
   c. Cytoplasm d. Golgi complex

5. Nucleus was discovered by:
   a. Roberk Hooke b. Robert Brown
   c. Conad Wadington d. Albert von Kolliker

6. The condensation of chromosome is observed in:
   a. Prophase I b. Anaphase I
   c. Metaphase I d. None of the above

7. Nuclear DNA replicates in the .....phase.
   a. G2 phase b. M phase
   c. S phase d. None of the above

8. Synapsis is defined as the pairing of.....
   a. Acentric chromosomes b. Non-homologous chromosomes
   c. Any chromosomes d. Homologous chromosomes

9. Mitosis can be observed in.....
   a. Polyploid individual b. Diploid individual
   c. Haploid individual d. All of the above

10. Cyclin is associated with.....

a. Leptospirosis
b. Glycolysis
c. Cylosis
d. Mitosis

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Descriptive

Time : 1 hr. 15 mins. Marks : 25

[Answer question no.1 & any two (2) from the rest]

1. Write short notes on: 2.5+2.5=5
   a) Structure of Nucleus
   b) Plasma membrane structure
2. Different cyclin Cdks are responsible for triggering different stages of the cell cycle. Elaborate. 10
3. Explain how the binding of a ligand initiates signal transduction throughout a cell with a suitable example of GPCRs and the role of secondary messenger for cellular response. 10
4. What is epigenetics? Explain heterochromatin and euchromatin. 2+4+4=10
5. Explain fluorescence and phase contrast microscope with diagrams. 5+5=10

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