2024/07

SET A

M.Sc. BOTANY
SECOND SEMESTER [SPECIAL REPEAT]
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 condensation of chromosome is observed in:
   a. Prophase I
   b. Anaphase 1
   c. Metaphase I
   d. None of the above

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

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

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

5. Cyclin is associated with.....
   a. Leptospirosis
   b. Glycolysis
   c. Cylosis
   d. Mitosis

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

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

8. 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

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

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

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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. Explain fluorescence and phase contrast microscope with diagrams. 5+5=10
3. Different cyclin Cdks are responsible for triggering different stages of the cell cycle. Elaborate. 10
4. What is epigenetics? Explain heterochromatin and euchromatin. 2+4+4=10
5. 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

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