REV-01 MSB/03/10

M.Sc. BOTANY SECOND SEMESTER (REPEAT) CELL BIOLOGY

MSB-205

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1hr. 30 mins.

Time: 15 mins.

Objective

Choose the correct answer from the following:

Marks: 10

Full Marks: 35

1×10=10

2024/06

SET

The G-protein coupled receptors have theiroutside the cell.

- a. Amino terminus
- c. Alpha helices

- b. Carboxyl terminus
- d. Beta helices

2. Protein kinase A is a:

- a. Completely inhibited by cyclic AMP
- c. Affected by cyclic AMP only under unusual circumstances
- b. Allosterically activated by cyclic AMP
- d. Activated by covalent binding of cyclic AMP
- 3. What catalyzes the cutting of PIP2 into 2 moles of IP3 and diacylglycerol in cell signalling?
 - a. Phosphokinase
 - c. Lipokinase

- b. Phospholipase C
- d. Phosphodiesterase C

b. Segregation and independent

4. The reason for daughter cells to differ from parent cells and also each other in meiosis is:

- a. Segregation and crossing over
- c. Segregation, crossing over and

independent assortment

- d
- d. Independent assortment and crossing over

assortment

5. Which process does the M phase of the cell cycle start with?

- a. Spindle formation
- c. Interphase

- b. Cytokinesis
- d. Karyokinesis

6. Which of the following is less condensed, less stained portion of chromatin?

a. Metaphase

b. Interphase

c. Heterochromatin

d. Euchromatin

7. What is the site of rRNA synthesis within a cell?

a. Chromatin

b. Nucleolus

c. Perinuclear space

d. Centrosomes

8. The resolving power of TEM is derived from:

a. Electrons

b. Specimens

c. Power

d. Ocular system

9. Plasma membrane is made up of:

a. Protein

b. Carbohydrate

c. Lipid

d. Both a and b

1

USTM/COE/R-01

- 10. Which of the following statements is true about the ends of the chromosome?

 a. The ends of the chromosome are called Satellites

 c. The ends of the chromosome are called Centromeres

 c. The ends of the chromosome are called Centromeres

 d. The ends of the chromosome are called Kinetochore

2

USTM/COE/R-01

[Descriptive]

Marks: 25-Time: 1 hr. 15 mins. [Answer question no.1 & any two (2) from the rest] 5 1. Discuss the working principle of Fluorescence microscope with illustrations. 2. What is a checkpoint in a cell cycle and how many checkpoints are in 2+1+7=10 the eukaryotic cell cycle? Elaborate the role of these checkpoints. 3. What are GPCRs? Explain how the binding of a ligand initiates signal 1+9=10 transduction throughout a cell with a suitable example of GPCRs and the role of secondary messenger for cellular response. 4. Describe the Fluid Mosaic Model of plasma membrane. Mention the 7+3=10 functions of plasma membrane. 10 5. Discuss the working principle of Phase contrast microscope with illustrations.