

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2018  
(First Semester)

Branch -**BIOTECHNOLOGY**

**CELLDYNAMICS**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks (10 x 1 = 10)

Microtubules are composed of 13 protofilaments of \_\_\_\_\_ heterodimers.

- (i)  $\alpha$  - tubulin (ii)  $\beta$  - tubulin  
(iii)  $\gamma$  - tubulin (iv) both (i) & (ii)

\_\_\_\_\_ are responsible for muscle contraction.

- (i) Myosins (ii) Kinesin  
(iii) Dynein (iv) Actin

The desmosomes was first discovered by \_\_\_\_\_ .

- (i) Camillo Golgi (ii) Giulio Bizzozero  
(iii) K. R Porter (iv) James Watson

\_\_\_\_\_ is the medical term for cancer that spreads to a different part of the body from where is started.

- (i) Metastasis (ii) Apoptosis  
(iii) Adenocarcinoma (iv) Leukemia

Who first discovered the plasma membrane?

- (i) Singer & Nicolson (ii) Watson & Crick  
(iii) Beedle & Tatum (iv) Naegeli & Cramer

Example for low voltage activated calcium channel is

- (i) T - type (ii) P - type  
(iii) N - type (iv) R - type

Which is the key organelle involved in digestion and waste removal?

- (i) Ribosomes (ii) Lysosomes  
(iii) Dictyosomes (iv) Desmosomes

\_\_\_\_\_ is considered the distribution and shipping for the cell's chemical products.

- (i) Endoplasmic reticulum (ii) Nucleus  
(iii) Golgi complex (iv) Glyoxysomes

DNA replication occurs during \_\_\_\_\_ of cell cycle.

- (i) G<sub>1</sub> phase (ii) S phase  
(iii) G<sub>2</sub> phase (iv) M phase

10 G protein coupled receptors are also known,as \_\_\_\_\_ .

- (i) 5 TM receptors (ii) 6 TM receptors  
(iii) 7 TM receptors (iv) 8 TM receptors

**SECTION - B (25 Marks)**

Answer **ALL** questions

12 a Distinguish between asymmetry and polarity.

OR

b Illustrate cell adhesion proteins.

13 a Explain the structure of fluid mosaic model of plasma membrane.

OR

b Elucidate Na<sup>+</sup> K<sup>+</sup> pumps.

14 a Illustrate the structure and functions of glyoxysomes.

OR

b Analyze the types of ER.

15a Highlight the cell cycle in yeast cell.

OR

b Elaborate the process of sensory signaling.

**SECTION -C (40 Marks!**

Answer **ALL** questions

**ALL** questions carry **EQUAL** Marks (5 x 8 = 40)

16 a Analyze the dynamics of microtubules in detail.

OR

b Elucidate the methods of cell disruption.

17 a Write a detailed account on cancer stem cells.

OR

b Comment on cell-cell interaction.

18a Justify the molecular model of cell membrane

OR

b Discuss the types of transporting systems in cells.

19 a Illustrate the structure and functions of golgi apparatus.

OR

b Assess the internal organization of nucleus.

20 a Describe signaling molecules and its receptors in detail.

OR

b Bring out MAP kinase pathways.

Z-Z-Z

END