2019

B.Sc.

1st Semester Examination

# PHYSIOLOGY (Honours)

## Paper - C 1-T

## (Cellular Basis of Physiology)

Full Marks : 40 Time : 2 Hours

*The figures in the margin indicate full marks.*
*Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any *five* questions of the following : 5×2

   (a) What is a liposome ? Mention its importance. 1+1

   (b) In which phase of cellcycle will you find a highly differentiated cell like hepatocyte ? Give some characteristic features of that phase. 1+1

   (c) Distinguish between symport and antiport systems with example. 1+1

*[ Turn Over ]*

(d) Mention the name of cell adhesion molecules. Write their functions. 1+1

(e) What are cytoribosomes ? State their role in cellular function. 1+1

(f) What is crossing over ? State its importance during cell division. 1+1

(g) Differentiate between phase contrast and electron microscopy. 2

(h) What is meant by resolving power of microscope ? 2

2. Answer any *four* questions from the following : 5×4

(a) Write down the electron microscopic structure of Golgi apparatus with a neat diagram. Mention its function. 3+2

(b) Discuss the structure and functional significance of gap junction. Classify different ion channels. 3+2

(c) Write notes on :

(i) Membrane fluidity

(ii) Microsomes. 2½+2½

(d) State the role of cyclin and cdks in regulation of cell cycle. Write down the cellular importance of G phase. 3+2

(e) Define active transport. How does simple diffusion differ from fascilitated diffusion ? What is meant by oncotic pressure ? 1+3+1

(f) Distinguish between desmosome and hemidesmosome. What are cadherins ? 3+2

3. Answer any *one* question form the following : 10×1

(a) Draw and describe the characteristic features of different phases of mitosis. Write down the process of phagocytosis and recepter mediated endocytosis with a neat diagram. 5+2½+2½

(b) Write down the general concept of embryonic origin of tissues. Describe the working principles of —

(i) Spectrophotometer.

(ii) Fluorescence microscope. 4+(3+3)

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