5C

(A-1) Seat NO: _____

No. of printed pages 2

SARDAR PATEL UNIVERSITY
B.sc Examination, V semester (CBCS)(NC)
US05CBIT06, CELL BIOLOGY
Time: 10:30 am to 1:30 pm
Monday, 16th May, 2016
Total marks: 70

Note: All Questions are compulsory
Figures to the right indicate marks

Q1 **Multiple choice questions:** [10]

1. Which one is example of sodium potassium pump?
(a) Active transport (c) Passive transport
(b) Pinocytosis (d) Endocytosis

2. The plasma membrane is composed of _____.
(a) Carbohydrates (c) Proteins
(b) Lipids (d) All of them

3. _____ is the major lipid found in the structure of plasma membrane.
(a) Phospholipid (c) Glycolipid
(b) Cholesterol (d) None of the above

4. Lamin is the example of _____.
(a) Intermediate filament (c) Actin filament
(b) Microfilament (d) Microtubules

5. _____ is the most abundant inrtacellular protein in eukaryotic cells.
(a) Actin (c) Tubulin
(b) Mirotubules (d) Intermediate filament

6. _____ molecules are required to communicate with different cells.
(a) Receptors (c) Extracellular messenger
(b) Ligand (d) All of them

7. _____ of G protein activate PLCβ.
(a) G_q (c) G_i
(b) G_s (d) $G_{12/13}$

8. Autotransphosphorylation is a feature of _____.
(a) RTK (c) Cytokine receptor
(b) GPCR (d) Adaptor protein

9. Cytochrome C triggers the activation of _____.
(a) Caspase – 9 (c) Caspase – 3
(b) Caspase – 8 (d) Caspase -10

10. Cancer cells secrete growth factors that promote the formation of new blood vessels known as _____.
(a) Angiogenesis (c) Immortalization
(b) Invasiveness (d) Metastasis

Q2 **Answer the following questions (Any 10 out of 12):** [20]

1. List out the functions of membrane fluidity.
2. Differentiate between active and passive transport.
3. Draw a neat and labelled diagram of fluid mosaic model.
4. Enlist the role of delta and epsilon tubulin.
5. What is centrosome?
6. Give functions of cilia and flagella.
7. What is the role of GTP in microtubule?

(P.T.O)

8. Define the term signal transduction.
9. What do you mean by docking proteins?
10. Give the difference between apoptosis and necrosis.
11. Define caspases with its role.
12. What are oncogenes? Give its characteristics.

Q3 (a) Give an explainatory note on functions of plasma membrane. [05]
(b) Explain briefly osmosis. [05]

OR

Q3 (a) Discuss membrane lipids and their functions. [05]
(b) Write a note on sodium potassium pump with diagram. [05]

Q4 (a) Discuss the structure, assembly and disassembly of microfilament. [07]
(b) Give a brief note on structure of microtubules. [03]

OR

Q4 (a) Explain kinesins as a motor protein. [06]
(b) Define cytoskeleton. Give its main components and functions. [04]

Q5 Describe signal transduction by GPCR with its termination. [10]

OR

Q5 Define signal amplification. Discuss the signalling of RTK_s and its end response [10]

Q6 (a) Explain the mechanisms responsible for conversion of proto-oncogenes into oncogenes. [05]
(b) Discuss the mechanism of intrinsic pathway of apoptosis. [05]

OR

Q6 (a) How molecular mechanism of cancer occurs? [05]
(b) Describe the receptor mediated pathway of apoptosis in detail. [05]

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