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Sardar Patel University
B. Sc. [V-SEMSTER Examination]
Biochemistry [US05CBCH04]
Cell Biology

Date: 20-11-2013

Time: 10:30 AM-1:30 PM

Total Mark: - 70

- Q. 1 Multiple Choice Question (All compulsory) 10**
1. Cristae are structures found in the _____.
a. Golgi Apparatus c. Chloroplast
b. Mitochondria d. Lysosomes
 2. Which organelle contains hydrolytic enzymes that digest micro-molecule?
a. Rough Endoplasmic reticulum c. Mitochondria
b. Lysosomes d. Golgi Apparatus
 3. Ribosomal RNA is formed in
a. Hetrochromatin c. Nucleolus
b. Golgi apparatus d. Euchromatin
 4. Which of the following component of the cytoskeleton is the thickest one?
a. Microfilament c. Intermediate filament
b. Microtubules d. None of above
 5. Which of the following central regulator of apoptosis are found in antiapoptotic protein group?
Bcl-2 b. Bcl-xL c. Bax d. Bad
 6. Which of the following meiosis phase is involved in assembly of lateral elements of the synaptonemal complex?
a. Zygotene c. Leptotene
b. Diplotene d. Pachytene
 7. Microtubules are cylinders that contain a globular protein called _____.
a. actin b. tubulin c. glucose d. cellulose
 8. In which fashion, the dimers of intermediate filaments associate to form tetramers?
a. Antiparallel fashion b. Parallel fashion
c. Circular fashion d. Both b and c
 9. Plasmodesmata of plant cells are functionally equivalent to _____ of animal cells.
a. gap junctions b. dermatomes
c. tight junctions d. cell surface receptors
 10. Which one of the following served as a genetic material in the first cell in the earth?
a. RNA b. Polypeptides
c. DNA d. Triglycerides

P.T.O

- Q. 2 Answer the following question (Attempt any ten)**
1. Explain active transport with appropriate example.
 2. Explain: All present day eukaryotes have evolved from common prokaryotic ancestor.
 3. Write down the role of Nuclear lamina in the structure of nucleus.
 4. What is Autophagy?
 5. Define the following terms: a. Stem cell b. Apoptosis
 6. Give a brief note on interphase of cell cycle.
 7. How caspases works in intrinsic pathway of apoptosis?
 8. Differentiate rough and smooth endoplasmic reticulum in their function.
 9. Describe the structure of centrioles and give its importance.
 10. Differentiate between mitosis and meiosis.
 11. Write in brief about Tight Junctions.
 12. Draw a figure of animal cell.
- Q. 3** (a) Explain the fluid mosaic model for structure of plasma membrane and its biochemical composition. 6
 (b) What is facilitated diffusion? Explain with appropriate example. 4
- OR**
- Q. 3** (a) Give detailed account of Plant cell wall, its structure and How it is formed? 6
 (b) Differentiate between active transport and passive transport. 4
- Q. 4** (a) Discuss the structure and function of nuclear pore complex in detail 6
 (b) Explain the structure of chloroplast with diagrammatic presentation. 4
- OR**
- Q. 4** (a) Explain the organization of golgi apparatus and its compartment. 6
 (b) Discuss Electron transport chain and ATP synthesis in mitochondria. 4
- Q. 5** (a) Write a note on intermediate filament assembly process in detail. 6
 (b) Explain the role of GTP in microtubule polymerization in brief 4
- OR**
- Q. 5** (a) Write a note on types of stem cells. 6
 (b) Give a brief note on structure and functions of cilia. 4
- Q. 6** Explain mitochondrial pathway of apoptosis in detail. 10
- OR**
- Q. 6** Describe various phases of mitosis and give its significance. 10