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Set - 04

32049

UNIVERSITY OF MUMBAI

Sem - IV (CBCSG) Examination April, 2018

Class: SYBSc.

Course: IX Course

Marks: 100

Code: USZO 402 (Cell Biology, Endomembrane System and Biomolecules) Time : 03 Hrs

Model Answer Key

Q.																										
1.	Attempt the following																									
a)	Select the correct option (One Mark for each correct answer)	05																								
1.	Answer- b)																									
2.	Answer- c)																									
3.	Answer- c)																									
4.	Answer- b)																									
5.	Answer- b)																									
b)	Match the Columns (one mark for each correct answer).	05.																								
	<table border="1"> <thead> <tr> <th colspan="2">Column A</th> <th colspan="2">Column B</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Robert Hook</td> <td>3.</td> <td>Cell</td> </tr> <tr> <td>2.</td> <td>Singer and Nicolson</td> <td>4.</td> <td>Fluid Mosaic Model</td> </tr> <tr> <td>3.</td> <td>Ergastoplasm</td> <td>5.</td> <td>RER</td> </tr> <tr> <td>4.</td> <td>F1 particles</td> <td>1.</td> <td>Mitochondria</td> </tr> <tr> <td>5.</td> <td>Leucine</td> <td>2.</td> <td>Amino Acid</td> </tr> </tbody> </table>	Column A		Column B		1.	Robert Hook	3.	Cell	2.	Singer and Nicolson	4.	Fluid Mosaic Model	3.	Ergastoplasm	5.	RER	4.	F1 particles	1.	Mitochondria	5.	Leucine	2.	Amino Acid	
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c)	Write True or False (one mark for each correct answer).	05																								
1.	Chromatin network is present in the cytoplasm of eukaryotic cell- False																									
2.	Mitochondria possesses a molecule of circular DNA in its matrix - True																									
3.	Lysosomes are responsible for protein synthesis.- False																									
4.	Fundamental energy yielding molecules of living system are carbohydrates - True																									
5.	A polypeptide chain has two ends namely C-terminal and N-Terminal- True																									
d)	Define the following (one mark for each correct answer).	05																								
1.	Active Transport.																									
	Answer: Movement of solutes facilitated by energy from the areas of lower concentrations to the areas of higher concentration.																									
2.	Osmosis																									
	Answer: Osmosis is the diffusion of water or solvent across a semi permeable membrane from region of its high concentration to that of low concentration																									

	3.	Autophagy	
		Answer: It means self-eating and is the process by which worn out organelles are digested within a cell.	
	4.	Lipid	
		Answer: Lipids are heterogenous group of oily or greasy organic compounds.	
	5.	Glycosidic bond	
		Answer: It is a covalent bond that links glycosides with each other and to other molecules which may or may not be glycoside.	
2.	a)	Answer the following.	10
	1.	Describe nuclear pore complex Defination or explanation of the term – Two marks Composition – Two marks Structure – Four Marks Function- Two marks	
		OR	
	2.	Enlist the types of junctional complexes and describe desmosomes, hemidesmosomes and microvilli. Types of Junctional Complexes – Four marks Desmosomes (Description) – Two marks. Hemidesmosomes (Description)- Two marks. Microvilli- Two marks.	
	b)	Answer any two of the following	10
	1.	Write a note on cell theory. History of cell theory: One mark Three points: Three Marks Modern Cell Theory: One mark	
	2.	Draw neat and labeled diagram of Fluid Mosaic Model. Correct Diagram – Two marks Six correct labeling –Three marks	
	3.	Write a note on classification of membrane receptors. Correct classification- Two marks Description of each type – One Mark each	
	4.	What are the functions of Microtubules. Definition or explanation of the term microtubule- one mark. Any four functions- Four marks (One mark each).	
3.	a)	Answer the following.	10
	1.	Explain the ultrastructure of endoplasmic reticulum Explanation on size, shape, dimensions etc. – Four marks Three different components – Six marks (One mark each).	
		OR	
	2.	Explain the functions of Mitochondria.	

	Any five functions – 10 marks (Two marks each).	
b)	Answer any two of the following	10.
1.	Write a note on Chemical Composition of Mitochondria. Explanation on the components and chemical molecules present in the matrix and on the F1 particles with their percentage – 05 Marks.	
2.	Write a note on role of lysosome in metabolism and as labilizers and stabilizers. Role in metabolism – Three marks Labilizers and stabilizers- Two marks.	
3.	Write a note on polymorphism in lysosome. Four Types- Four Marks (one mark each) Diagram- One mark	
4.	Write a note on any three components and the functions of Golgi Complex. Three types- Three marks (One mark each) Functions- Two marks	
4.	a) Answer the following.	10
1.	Describe the clinical significance of Proteins Five significance with explanation – 10 marks (Two marks each)	
OR		
2.	Explain Vitamin 'C' and its Clinical significance. Explanation on Vitamin C- Four marks Clinical significance any three- Six marks (Two marks each).	
b)	Answer any two of the following	10.
1.	Write a note on Deficiency Manifestations of Vitamin 'A' Any three deficiencies with explanation – five marks	
2.	Write a note on Primary structure of protein Explanation on poly peptide chain formation and mention of Peptide bond- Five marks.	
3.	Write a note on Saturated Fatty Acids. Definition- One mark Explanation – Three marks Significance/function - One mark	
4.	Write the properties of carbohydrates. Any five properties – Five marks (One mark each)	
5.	Answer any four of the following	20
1.	What are the functions of microfilament Any three functions with explanation– Five marks	
2.	Gap Junction. Definition- One mark. Explanation –Three marks Significance- One mark	

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3.	Draw neat and labeled diagram of endomembrane system. Correct diagram – Two marks Six correct labeling – three marks (Half mark each)
4.	Write a note on Smooth endoplasmic reticulum. Structure and forms- Two marks Functions – Three marks.
5.	Write a note on Fructose Explanation on its reducing ability, its monosaccharide nature and isomeric nature – Five marks.
6.	Write a note on peptide bond and its formation by condensation process. Peptide bond definition- One Mark Condensation Reaction – Four marks.