[96/109]

No. of Printed Pages: 2

## SARDAR PATEL UNIVERSITY

M.Sc. Examination -M. Sc. Microbiology/Biotechnology - 1st Semester
PS01EMIC21/PS01EBIT21-Biochemistry
27<sup>th</sup> March 2018 (Wednesday), 10:00 am to 1:00 pm
2019 Maximum Maximum

Maximum Marks: 70

Q.1	Choose the correct option	1x8=8	
		ich added group of other atoms are called as c. both a and b	
	b. Metabolite	d. None of these	
	(ii) Entire collection of small molecules in a given cell has been called that cell's		
	a.Genome b. Metabolome (iii) The units of absolute temperature	c. both a and b d. None of these c, T, are	
	a. Celsius	c. Kelvin	
	b. Fahrenheit	d. All the above	
	(iv) As per Ramachandran plot ø and φ can have any value b/w		
	a180° and +18°	c180° and + 0°	
	b180° and +180°	d. 0° and +180°	
• •	(v) What is the fate of excess glucose 6- phosphate in a liver cell?		
	a. PP Pathway	c.Glycogenesis	
	b. Glycolysis	d. all of the above	
•	(vi) The urea cycle is discovered by		
	a. Hans Krebs	c. G. N. Ramachandran	
	b. Pauling and Corey	d. none of the above	
	(vii) is a key intermediate in the synthesis of aromatic amino acids. a. Shikimate b.Chorismate c.3-phosphoglycerate d. Pyruvate		
	(viii) In PP pathway Glucose-6-PO <sub>4</sub> converts to 6-phosphogluconolactone which is catalyzed by		
	a. Acetyl CoA dehydrogenase b.Glucose-6-PO4 dehydrogenase	c. 6-Posphogluconate dehydrogenase	
	b.Glucose-6-PO₄ dehydrogenase	d. None of the above	

Q.2.	Attempt any seven of the following  a. What are informational biomolecules?		
	b. What are 'chiral centers'?.		
	c. Define: 'Electron motive force'. d. What is the fate of pyruvate in low-oxygen conditions?		
	e. The standard free energy change is related to the equilibrium constant: Justify.  f. Give one letter symbol for Glycine, Aspartic acid, Arginine and Glutamic acid.		
	<ul><li>g. Define: Entropy, Free energy change, Enthalpy and Standard free energy</li><li>h. Give the significance of Hasselbalch equation.</li><li>i. Enlist the name of amino acids synthesized from Chorismate.</li></ul>		
Q. 3.	a. Write a note on: TCA cycle	[06]	
	b. Discuss glycogen synthesis and its utilization.	[06]	
	OR		
	b. Explain glyoxylate cycle.	[06]	
Q. 4.	a. Define aerobic respiration. How electron flow during oxidative pathway.	[06]	
	b. Write a detailed note on iron sulphur proteins and cytochromes.	[06]	
	OR		
	b. Draw well labeled diagram of ATPase. Explain binding-change model for ATP synthase.	[06]	
Q. 5.	a. Explain the role of the enzymes in fatty acid synthesis.	[06]	
	b. Write a note on membrane lipids.	[06]	
	OR		
	b. Comment: Fatty acid oxidation is tightly regulated.	[06]	
Q.6.	a. Describe transamination and deamination steps of amino acid catabolism.	[06]	
	b. Explain Ramachandran plot.	[06]	
	OR		
	b. Discuss purine nucleotide synthesis and its regulation.	[06]	
	XXXXXXXXX		