## LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



### M.Sc. DEGREE EXAMINATION -BIOTECHNOLOGY

### FIRST SEMESTER - NOVEMBER 2018

## 17/18PBT1MC02-BIOCHEMISTRY

	27-10-2018 01:00-04:00	Dept. No.			Max.: 100 Marks
1. 2. 3. 4. V 5.	Which of the following in a) ATP Visualization of protein ba a) Safranin b) The following are activated.	Answer An	b) Phos d)Aceta ucing sugar c) ofructo kinas c) ADP ied out usin c) Ligh ic cleavage c) Fibrin	y which of the phate buffer ate buffer? Lactose e in glycolysis	d) Sucrose
<ul> <li>6. Amphipathic molecules form micelles in water.</li> <li>7. Gangliosides are the most complex sphingolipids.</li> <li>8. Glycolysis under anaerobic conditions leads to formation of pyruvic acid.</li> <li>9. The activated form of carnitine is carnitine acetyl CoA.</li> <li>10. The protein part of an enzyme is called the holoenzyme.</li> </ul>					
III. Complete the following  11. The H-O-H bond angle is  12. Inulin is the polymer of  13 is an electron carrier that can diffuse from complex I to complex III.  14 is a naturally occurring hydrophilic amino acid derivative.  15. Threonine dehydratase is regulated by					
16. 17. 18. 19.	Define entropy. What is animal starch? Give an example of subst What are Chaperones? What are homotropic allo	rate level phosp	•	in glycolysis.	(5 x 1 = 5 Marks)

#### PART B

## Answer the following each within 500 words. Draw diagrams wherever necessary.

 $(5 \times 8 = 40 \text{ marks})$ 

21. (a) Derive the Hendersen Hasselbalch equation.

OR

- (b) Mention the significance of hydrogen bonds in water molecule.
- 22. (a) Enumerate the functions of proteoglycans.

OR

- (b) Highlight the significance of SDS in PAGE.
- 23. (a)Write the structure of ATP and mention the factors aiding its hydrolysis.

OR

- (b)Discuss the regulation of phosphofructokinase and hexokinase in glycolysis.
- 24. (a) Write down the steps involved in the  $\beta$  oxidation of fatty acids.

**OR** 

- (b) How are pyrimidines synthesized?
- 25) (a)Explain the reaction coordinate for a chemical reaction.

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(b)Comment on acid base catalysis and metal ion catalysis.

#### PART - C

# Answer any TWO of the following, each within 100 words. Draw diagrams wherever necessary.

 $(2 \times 20 = 40 \text{ Marks})$ 

- 26. Describe the ion product of water and working of pH meter.
- 27. Discuss the biosynthesis of proteins with a suitable flow chart.
- 28. Elaborate on the electron transfer from NADH to oxygen and ATP synthesis.
- 29. Write in detail about competitive and noncompetitive inhibition with examples.

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