

**M. Sc. DEGREE EXAMINATION - NOVEMBER 2017**  
**BIOTECHNOLOGY**  
**FIRST SEMESTER**

**COURSE : CORE**  
**PAPER : BIOCHEMISTRY**  
**TIME : 3 HOURS**

**MAX. MARKS: 100**

**SECTION – A**

**ANSWER ALL QUESTIONS:**

**(20 x 1 = 20)**

1. Write any two applications of Biochemistry?
2. Define Marker Enzymes.
3. List out any four organelles of an animal cell.
4. Give any two differences between plant and animal cell.
5. Define pH.
6. What are fibrous proteins? Give examples.
7. Draw the structure of any one pyrimidine base.
8. Give the structure of Triglycerides.
9. Define an enzyme.
10. What is the role of an active site in an enzyme?
11. Define Product Inhibition.
12. Define Cofactor.
13. Give the structure of ATP.
14. Which are the two initial substances in the Urea Cycle?
15. What is the significance of gluconeogenesis?
16. Give the structure of any one pentose from the pentose phosphate pathway.
17. Define Fed-state.
18. What are Hormones?
19. What are the metabolic activities occur in the muscles?
20. Why is the liver called the Chemical Laboratory of our body?

**SECTION – B**

**ANSWER ANY FOUR QUESTIONS:**

**(4 x 10 = 40)**

21. How are cell components fractionated? Explain the Technique used.
22. List out the organelles of the cell and give the marker enzymes for each.
23. Explain the maintenance of body water in human.
24. Draw a neat labeled diagram of the DNA and explain its features.
25. Explain the Respiratory Chain and Oxidative Phosphorylation in detail.
26. Write a note on the methods of degradation of Amino acids and explain the Urea Cycle.
27. Write a note on the role of Tyrosine Kinase.

**SECTION – C**

**ANSWER ANY TWO QUESTIONS:**

**(2 X 20 = 40)**

28. Explain the metabolic adaptations that take place in the Fed and Starvation states.
29. How are Enzymes useful in Clinical Diagnosis? Explain with examples.
30. How is the pH of the system maintained in Kidney and Haemoglobin?
31. Explain the steps involved in Glycolysis and TCA Cycle.