

M.TECH DEGREE EXAMINATIONS: JANUARY 2011

First Semester

BIOTECHNOLOGY

BTY501: Human Physiology and Biochemistry

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 2 = 20 Marks)

1. Explain the formation of HCl.
2. Explain the role of diuretics and mention its functional role in physiology.
3. Name the buffer systems of plasma.
4. What are the functions of CYT P540?
5. Explain the mechanism of thyroid hormone action
6. Write a Brief note on structural organization of anterior pituitary
7. Define oxidative phosphorylation.
8. Explain the role and structure of TPP.
9. Explain the key regulatory enzymes of fatty acid synthesis.
10. What is futile cycle?

PART B (5 x 16 = 80 Marks)

11. (a) (i) Explain the mechanism of zymogen activation. (8)
(ii) Write a note on acid-base balance and its maintenance. (8)
(OR)
(b) Give detailed note on renal function tests
12. (a) (i) Explain biotransformation. (8)
(ii) Write notes on the mechanisms of blood clotting and its associated diseases. (8)
(OR)
(b) Explain Liver function tests in detail.
13. (a) Enumerate the disorders of pancreas. (OR)
(b) Explain the secretion and functions of anterior pituitary hormones.
14. (a) (i) Write a note on role and mechanism of action of NAD⁺/NADP⁺ (8)
(ii) Explain the role and action of (i) B12 coenzymes (ii) Biotin (8)
(OR)
(b) Explain the respiratory chain and its role in energy capture.
15. (a) Give a brief note on regulation of carbohydrate metabolism at cellular and enzymatic level. (OR)
(b) (i) Explain the integration of carbohydrate and lipid metabolism.
(ii) Write a note on ketogenesis.