

B.Sc Sem.-6 (Rep) Examination**SE 311****Biotechnology****October-2024****Time : 2-30 Hours]****[Max. Marks : 70**

Question 1: Describe the reactions of TCA Cycle. Explain why it is called as an amphibolic pathway. (14 Marks)

OR

Question 1(A): Describe the glycolytic pathway and its energetics in detail. (7 Marks)

Question 1(B): Write a short note on Beta oxidation of fatty acids. (7 Marks)

Question 2: Describe the pathways involved in the degradation of purine and pyrimidine nucleotides. (14 Marks)

OR

Question 2(A): How is the urea cycle regulated? Describe its importance. (7 Marks)

Question 2(B): Describe the decarboxylation reaction of amino acid degradation and its importance in production of biologically active compounds. (7 Marks)

Question 3: How does class-I hormone differs from class –II hormone? Describe with examples of each of the hormone signalling pathway. (14 Marks)

OR

Question 3(A): Describe in brief the classification of hormones according to their chemical nature and their properties. (7 Marks)

Question 3(B): Explain Positive feedback regulation of hormones using the example of prolactin hormone. (7 Marks)

Question 4: Why pituitary gland is called the master control gland? List the hormones produced by it and its control of secretion of other hormones. (14 Marks)

OR

Question 4(A): Write a short note on thyroid hormone biosynthesis. (7 Marks)

Question 4(B): Explain the regulation of steroid hormone production with an example. (7 Marks)

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Question 5: Attempt any seven questions (2 Mark each)

(14 Marks)

1. Unsaturated fatty acid oxidation produces more energy than saturated fatty acid (True/False)
 2. What is gluconeogenesis?
 3. Define anaplerotic reaction with an example.
 4. Which pathway is used to produce ribose sugar in animals?
 5. Give an example of a compound produced by deamination of amino acid.
 6. What is salvage pathway used for?
 7. What is the end product of degradation of pyrimidine nucleotides in humans?
 8. How many subunits are present in G- protein coupled receptor?
 9. Define Hormone.
 10. Define signalling cascade.
 11. Which enzyme produces cyclic AMP?
 12. Which cells produce testosterone?
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