

SOP / Sem - II / Bio-chem - I /

19/12/15

QP Code : 21782

(3 Hours)

[Total Marks : 70

- N.B. : (1) All questions are compulsory.
(2) Write all subquestions of a main question together.

1. Answer the following.

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| (a) Draw structure of lactose by Haworth Projection Formula. | 1 |
| (b) Draw structure of fructose by Fisher Projection Formula. | 1 |
| (c) Differentiate reducing and non reducing sugars. | 1 |
| (d) Give name and draw the structure of two acidic-amino acids with one letter code and three letter code. | 2 |
| (e) Draw structure of Arachidonic acid. | 1 |
| (f) Explain the effect of Temperature and pH on enzyme activity. | 2 |
| (g) What is irreversible enzyme inhibition? | 2 |
| (h) Explain mechanism of HMG CoA reductase enzyme inhibitors. | 1 |
| (i) Explain Operon Strategy for regulation of enzyme activity. | 1 |
| (j) Name active forms of Vitamin B ₃ . | 1 |
| (k) Enlist fat soluble vitamins. | 1 |
| (l) Explain metabolism. | 1 |

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| 2. (a) Write note on secondary structure of proteins. | 3 |
| (b) Explain competitive inhibition. | 3 |
| (c) Explain FADH ₂ as energy carrier. | 3 |
| (d) Enumerate salient features of digestion of lipids. | 2 |

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| 3. (a) Compare glycogen and starch in term of their structure of proteins. | 3 |
| (b) Write note on vitamin A or Vitamin K. | 3 |
| (c) Explain multiple cascade system for enzyme regulation. | 2 |
| (d) Write note on biological role of folic acid. | 2 |
| (e) Explain breakdown chart for carbohydrate metabolism. | 1 |

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| 4. (a) Classify amino acid based on their structure with examples of each class (structures not necessary). | 3 |
| (b) Write note on phospholipids. | 3 |
| (c) Discuss biological role of Vitamin B ₂ or Vitamin B ₁ . | 3 |
| (d) Justify "Oxidation as a source of energy in biological system". | 2 |

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5. (a) Write short note on cellulose and explain why it is not digested by human beings? 3
(b) Explain modifications of Michaelis-Menten equations. 3
(c) Write note on Ascorbic acid. 3
(d) Explain Laws of thermodynamics. 2
6. (a) Differentiate fat and oil. 2
(b) Give examples of drugs that inhibits enzymes and their clinical significance:- 2
(i) DNA Polymerase
(ii) Thymidylate synthase
(c) Explain product feedback inhibition mechanism in enzyme regulation. 2
(d) Write note on Vitamin B₇ or Vitamin B₅. 3
(e) Discuss the role of Tochoferol in body. 2