

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 9202

J

Unique Paper Code : 3183012004

Name of the Paper : Medical Biochemistry

Name of the Course : **B.Sc. (H) Biomedical Sciences**

Semester : IV (NEP)

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Question No. 1 is compulsory.
3. Attempt five questions in all.
4. Subparts of the questions should be attempted together.
5. Draw illustrations or diagrams wherever necessary.

1. (a) Define : (2×4=8)

- (i) Adipokine
- (ii) Chylomicron
- (iii) Vitamer
- (iv) Alloenzymes

(b) Differentiate between : (3×4=12)

- (i) Uncouplers and inhibitors of oxidative phosphorylation
- (ii) Cortisol and epinephrine
- (iii) LDL and HDL
- (iv) RDA and adequate intake

(c) State true or false and justify (2.5×4=10)

- (i) Methotrexate is used as an anti-cancer drug
- (ii) Soluble fibre can bind to bile acids and increase their excretion
- (iii) Mice lacking the leptin receptor will be obese
- (iv) SGOT is a more liver specific enzyme.

2. Write short notes on : (5,5,5)

- (a) LDL uptake
- (b) Lectins
- (c) NSAIDs

P.T.O.

3. (a) Name the vitamin, deficiency of which may cause
- (i) Wernicke's encephalopathy
 - (ii) Lactic acidosis
 - (iii) Methyl malonyl aciduria
 - (iv) Xerophthalmia
 - (v) Megaloblastic anemia
- (b) How does leptin regulate hunger in the long term?
- (c) How is cholesterol synthesis regulated post-transcriptionally? (5,7,3)
4. (a) What is the clinical significance of the isoenzymes of Lactate Dehydrogenase?
- (b) How does the liver uptake LDL? What happens in familial hypercholesterolemia?
- (c) Give one word for
- (i) Enzymes that catalyze the formation of leukotrienes
 - (ii) Enzyme that inhibits lectin and influenza virus protein interaction
 - (iii) Molecule that inhibits the action of HMG CoA reductase
 - (iv) Molecule that regulates metabolism in the long term by regulating the gene expression
 - (v) An orexigenic hormone (5,5,5)
5. (a) What are lipoproteins? Classify them on the basis of their composition and give the relevance of each.
- (b) What is the importance of thermogenin in metabolism? Why is there a higher percentage of brown adipose tissue in infants and not in adults? (8,7)
6. (a) Give the complete biochemical reaction catalysed by Creatin Kinase. Which are its different isoforms. Discuss the diagnostic significance of the enzyme.
- (b) Discuss how energy sources in the brain vary in well fed, fasting and starvation conditions.
- (c) Illustrate and discuss how Vitamin C and Vitamin E act synergistically to inhibit lipid peroxidation. (5,5,5)