

- (iii) Molecule that regulates hunger between the meals of the day.
 - (vi) Target organ of leptin.
 - (v) Enzyme that is of diagnostic significance in myocardial infarction.
- 5.** (a) Give the complete biochemical reaction catalysed by LDH. Which are is different isoforms. Discuss the diagnostic significance of the enzyme. 5
- (b) During fasting, how does a shift in metabolism provide fuel for the brain? 5
- (c) Discuss the metabolism of Vitamin D in the body. What is its target organ? 5
- 6.** (a) Why is HDL called good cholesterol? Illustrate and discuss the process of reverse cholesterol transport? 8
- (b) Discuss the source, target organ and mechanism of action of leptin. 7

[This question paper contains 4 printed pages]

Your Roll No. :

Sl. No. of Q. Paper : **1828** **I**

Unique Paper Code : 3183012004

Name of the Paper : Medical Biochemistry (NEP)

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

Semester : IV

Time : 3 Hours **Maximum Marks : 90**

Instructions for Candidates :

- (a) Write your Roll No. on the top immediately on receipt of this question paper.
- (b) Attempt any **FIVE** questions in **all**. Question **NO.1** is compulsory.
- (c) Subparts of the questions should be attempted together.
- (d) Draw illustrations or diagrams wherever necessary.

- 1.** (a) Define 2×4=8
- (i) Thermogenin
 - (ii) Lipoproteins
 - (iii) Vitamin
 - (iv) Isoenzymes

- (b) Differentiate between 3×4=12
- (i) LCAT and ACAT
 - (ii) Brown Adipose Tissue and White Adipose Tissue
 - (iii) LDL and HDL
 - (iv) Ghrelin and PYY₃₋₃₆
- (c) State **true** or **false** and justify : 2.5×4=10
- (i) Hemolytic anemia may occur in premature and low birthweight infants.
 - (ii) Neuraminidases are target of anti-viral drug
 - (iii) Chylomicrons have cholesterol esters as well as free cholesterol.
 - (vi) ALT is a more liver specific enzyme.
- 2.** Write short notes on 5+5+5=15
- (a) Lectins
 - (b) Folate Trap
 - (c) Prostaglandins
- 3.** (a) Name the enzyme that catalyses/ takes part in the following reactions
- (i) Carboxylation of glutamate residues in proteins that bind Ca²⁺

- (ii) Transamination reactions
 - (iii) Activity of proto-collagen hydroxylase
 - (vi) Activity of methyl malonyl CoA mutase
 - (v) Redox reactions in various metabolic pathways
- (b) Give the reaction catalysed by SGOT or SGPT. What role does pyridoxal phosphate play in this reaction?
- (c) How is cholesterol synthesis regulated at the transcriptional level? 5+5+5=15
- 4.** (a) Discuss the clinical significance and biochemical metabolic reactions catalysed by creatin kinase. Why do muscle builders take creatine supplements? 5
- (b) Metabolism of the brain is remarkable in several ways. Elucidate. 5
- (c) Give one word for 5
- (i) Precursor lipid of the prostaglandins and leukotrienes.
 - (ii) Enzyme inhibited by the statins.