

Time : 3 Hours]**[Total Marks : 50**

- Instructions :** (1) Each section should be answered in separate answer book.
(2) Answers should be brief and to the point.

SECTION – I

1. State or false with justification : (Any six) **1 × 6 = 6**
- (a) Some RNA molecules act as an enzyme.
 - (b) Severe muscular exercise leads to lactic acidosis.
 - (c) Insulin is always given orally.
 - (d) Smoking is a risk factor for atherosclerosis.
 - (e) Malate aspartate shuttle is essential for fatty acid oxidation.
 - (f) Taq polymerase is used in replication.
 - (g) Screening of Diabetic patients is done with microalbuminuria.
2. (A) Read the following case report and answer the questions : **5**
- A 20 years old female presented with weakness, breathlessness, palpitation while climbing stairs. She was having excessive bleeding during menstruation. Laboratory investigation shows Hemoglobin- 8 gm/dl, Serum Iron-38 microgram/dl and Blood Sugar- 90 mg/dl. She was diagnosed as iron deficiency anemia.
- (i) Name storage and transport form of iron and proteins which transport it.
 - (ii) Name various sources of iron.
 - (iii) What are the causes of iron deficiency anemia ?
 - (iv) Which factor affects iron absorption ?
 - (v) Name various iron containing proteins and enzymes.

- (B) The followings : **3 + 2 = 5**
- (i) Serotonin- function and catabolism and carcinoid tumour.
 - (ii) Amino acids and their derivatives as neurotransmitter.

3. Write short notes : (Any **three**) **3 × 3 = 9**
- (i) Fatty liver and lipotropic factors.
 - (ii) Galactose metabolism and galactosemia.
 - (iii) Metabolic effects of Insulin and Glucagon.
 - (iv) Characteristics of Genetic Code.

SECTION – II

4. Give your comments with Biochemical justification : (Any **six**) **1 × 6 = 6**
- (a) Bile salt is important for regulating body cholesterol level.
 - (b) Aminoacyl t-RNA synthetase is important for protein synthesis.
 - (c) PCR is used in medico legal cases.
 - (d) Post-translational modification of collagen requires vitamin C.
 - (e) Monoclonal antibody is used in treatment of cancer.
 - (f) Serum TSH estimation is done in goitre.
 - (g) Absorption of calcium is decreased by many factors.
5. Discuss the following : (any **two**) **5 × 2 = 10**
- (a) Blot techniques and its application.
 - (b) Fatty acid synthesis with its regulation. Write on Carnitine.
 - (c) HMP Shunt pathway and its significance.
6. Write short notes : (any **three**) **3 × 3 = 9**
- (a) Metabolic function of Glycine. Explain Creatine in detail.
 - (b) Metabolism in Starvation.
 - (c) HIV-Structure and virus entry. Write on laboratory analysis of AIDS.
 - (d) Differentiate Kwashiorkor and Marasmus.