


B-4005
First Year M. B. B. S. Examination
July - 2017
Biochemistry : Paper - I

 Time : $2\frac{1}{2}$ Hours]

[Total Marks : 50

Instruction :

Read the instructions carefully and fill up the details of the examination strictly the details of the signs on your answer book.

Name of the Examination :
 First Year M. B. B. S.

Name of the Subject :
 Biochemistry : Paper - I

Subject Code No. : 4 0 0 5 Section No. (1, 2,) : 182

Seat No. :

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Student's Signature

SECTION - I

- 1 Short notes : (2 out of 3) 2×4=8**
 - (a) Describe glycogen synthesis and breakdown pathways.
 - (b) Metabolism of Very low density lipoproteins.
 - (c) Metabolic alterations in diabetes mellitus. Mention the names of hormones which play significant role in the control of blood glucose levels.

- 2 Short notes : (4 out of 6) 4×3=12**
 - (a) Metabolic changes during starvation (any four).
 - (b) Site specific inhibitors of electron transport chain.
 - (c) Fetoproteins as tumor markers.
 - (d) Dietary fiber and its importance.
 - (e) Give two examples of phospholipids and various functions of phospholipids (Four functions).
 - (f) Regulation of serum calcium levels.

B-4005]

1

[Contd...

- 3 Answer in one or two lines : (5 out of 6) 5×1=5
- Functions of prostaglandins (any four).
 - Energy generation aspects of anaerobic glycolysis.
 - Facilitated and active transport.
 - Names of two mucopolysaccharides and their functions.
 - Essential fatty acids.
 - Role of lead in iron metabolism.

SECTION - II

- 4 Read the following case and answer the questions : 5×2=10

A 10-year-old young girl complained of easy fatigability and tiredness. She was not able to concentrate in the class leading to fall in her grades. She appears uninterested in her surroundings and looked very pale. On examination she had pallor. Laboratory tests were ordered for complete blood count, hemoglobin, iron, TIBC and transferrin. It was diagnosed as iron deficiency anemia. She was put on iron rich supplements and diet.

- How iron is absorbed ?
- What is the recommended daily intake of iron in adults and pregnant women ?
- What is transferrin and what is its connection with iron ?
- Name the four causes of development of iron deficiency anemia.
- What is the biochemical basis (pertaining to iron) for easy fatigability and tiredness in the young girl of above case ?

B-4005]

2

[Contd...

- 5 Write justification : (5 out of 7) 5×2=10
- Carnitine plays important role in the oxidation of fatty acids in mitochondria.
 - Muscle cannot contribute towards maintaining of blood glucose level.
 - Administration of oxidant drugs to the person with glucose 6 phosphate dehydrogenase deficiency leads to clinical complications.
 - Hyperuricemia may be observed in Von Gierke's disease.
 - Cataract may be developed at an early age in uncontrolled diabetes mellitus.
 - More energy is generated from 1 gm of lipids compared to 1 gm of carbohydrates.
 - Premature babies likely to develop respiratory distress syndrome.
- 6 Answer in one or two lines : (5 out of 6) 5×1=5
- Different substrates for gluconeogenesis (any four).
 - HDL - Cholesterol.
 - Protein-Energy malnutrition.
 - Omega 3 and 6 fatty acids.
 - ELISA.
 - Ketoacidosis.