

2014

M.Sc.

4th Semester Examination

BIOCHEMISTRY

PAPER—BIC-401

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer all questions.

Group — A

1. Answer any *five* questions from the following : 5×2
- (a) What is respiratory acidosis ?
 - (b) State the importance of selenium.
 - (c) What is Nerst Potential ?
 - (d) Mention the reason of type-2 diabetes.
 - (e) Name two glycogen storage diseases with biochemical reason.
 - (f) State the function of Calcitonin.
 - (g) Mention the function of the hormones secreted from intermediate lobe of Pituitary.
 - (h) What is Wilson's disease ? How does it occur ?

(Turn Over)

Group — B

Answer any *two* questions from the following : 5×2

2. Write the role of thiamin and biotin in relation to carboxylation and decarboxylation reactions in carbohydrate metabolism. State the deficiency symptoms of these two vitamins. 3+2
3. Write short notes : $2\frac{1}{2}+2\frac{1}{2}$
 - (i) pKa and pKb values.
 - (ii) Haemoglobin buffer.
4. Briefly discuss the role of different placental hormones to support Pregnancy. 5
5. Give a brief account of Inborn Errors of Metabolism with a special reference to Phenylketoneuria. 5

Group — C

Answer any *two* questions from the following : 2×10

6. How does Vitamin D regulate calcium level in blood? Describe the biochemical reason and clinical manifestation of Tay-Sachs disease. 5+5
7. Describe the physiological and biochemical functions of the hormones secreted from Adrenal-Cortex and discuss about the disorders related to the hormones. (4+4)+2
8. Write short notes on : 5+5
 - (i) Corpus luteal hormones ;
 - (ii) Vit B₁₂ deficiency.
9. Briefly discuss the role of cortisol on cellular metabolism. Discuss the absorption, transport, clinical indications and storage of Vitamin A. 4+6