

**2015**

**M.Sc.**

**2nd Semester Examination**

**BIOCHEMISTRY**

**PAPER—BIC-203**

*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.*

**Group—A**

1. Answer any *five* questions from the following : 5×2

(a) What is Lesch-Nyhorn syndrome ?

(b) How will you control uric acid level in blood ?

(c) What is Ketoacidosis ?

*(Turn Over)*

- (d) What is cytochrome oxidase? Mention its different functions.
- (e) What are the role of folate and biotin in carbohydrate metabolism?
- (f) Name the amino acid precursors of dopamine and serotonin.
- (g) Mention the influence of amino acid concentration in purine metabolism.
- (h) What is the important physiological function of lactate dehydrogenase?

### Group—B

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

- 2. Give a brief account of Glyoxalate cycle. 5
- 3. What are transamination and oxidative deamination? Discuss with suitable example and steps of reaction. (1+1)+3
- 4. Discuss different regulatory steps of glycolytic pathway and their rate determining covalent and allosteric modulators. 5
- 5. Briefly state the pathway serine catabolism. 5

**Group—C**

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

6. What is oxidative phosphorylation? Discuss the mechanism of action of ATP synthase for ATP formation by this process. 3+7
7. How fatty acids are transported to cell organelle for its oxidation? Discuss the  $\beta$ -Oxidation of palmitate with possible outcome of energy values. 4+6
8. (i) Explain the purine degradation pathway with suitable diagram.
- (ii) What is the role of PRPP synthetase? 8+2
9. (i) What are the differences of polysaccharide metabolism between liver and muscle?
- (ii) Regulation of energy production RBC.
- (iii) Differentiate mechanistic approach of transketolase and transaldolase. 4+2+4
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