

**2013**

**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.**

- 1. Answer any five questions from the following : 2×5**
- (a) What is Down's syndrome?
  - (b) What is the role of Vit B12 in erythropoiesis?
  - (c) What is hypernatremia?
  - (d) What is sex dimorphism?
  - (e) How haemoglobin contribute as a buffer system in blood?
  - (f) Why goat is a metabolic disorder?
  - (g) Why do many cancer cells rely on anaerobic glycolysis?
  - (h) State the biological implication of Handerson-Hasselbalch equation.

*(Turn Over)*

2. Answer any two questions from the following : 5×2
- (a) Describe the clinical manifestation of G6PD deficiency. "G6PD deficient patients are resistant to malaria" — Explain. 3+2
  - (b) Describe the role of Vitamin E in antioxidative mechanism. 5
  - (c) What is metabolic acidosis? Why does it happen in Patient with severe and uncontrolled diabetes?
  - (d) Describe how sex dimorphism is related to vitamin metabolism.
3. Answer any two questions from the following : 10×2
- (a) Describe the roles of lung and kidney in maintaining blood buffer system. 5+5
  - (b) (i) Name the hormones secreted from Posterior and intermediate Pituitary and mention their target organ and metabolic function.  
(ii) What do you know about 'estrogen induced carcinogenesis'? 5+5
  - (c) What is resting membrane Potential and action Potential? What do you mean by "all or none law"? Graphically show the Polarisation and depolarisation of membrane of nerve cell. (2+2)+3+3
  - (d) (i) Write the metabolic role of  $T_3$  and  $T_4$ .  
(ii) Describe how insulin and epinephrine regulating cause obesity. 5+5