

**MANIPAL UNIVERSITY****FIRST BDS DEGREE EXAMINATION – JULY 2016****SUBJECT: GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY (ESSAY)**

Wednesday, July 20, 2016

Time: 14:15 – 17:00 Hrs.

Maximum Marks: 60

✍ Answer Section “A” and Section “B” in two separate answer books.

✍ Draw diagrams and flow charts wherever necessary.

**SECTION – A : HUMAN PHYSIOLOGY (30 MARKS)**

1. Give the normal blood glucose level. List the various hormones that regulate the blood glucose level. Discuss in detail the role of insulin in the regulation of blood glucose. Add a note on diabetes mellitus.

(1+3+4+2 = 10 marks)

**2. Write Short notes:**

- 2A. List the functions of middle ear and explain any one function.  
2B. Define deglutition. Describe the second phase of deglutition.  
2C. Draw a labelled ECG recorded from limb lead II. What are its clinical uses?  
2D. Define hypoxia. Classify hypoxia and give its causes.  
2E. Micturition reflex.

(4 marks × 5 = 20 marks)

**SECTION – B : BIOCHEMISTRY (30 MARKS)**

- 1A. Write the reactions of urea cycle and the inborn errors associated with it.

(3+2 = 5 marks)

- 1B. What is the normal fasting blood glucose level? Discuss its hormonal regulation.

(1+4 = 5 marks)

**2. Answer the following:**

- 2A. Define  $K_m$  value of an enzyme. Write its significance.  
2B. Describe ketogenesis.  
2C. Write the pathway of purine catabolism.  
2D. Calculate the energy requirement for a dental student whose weight is 60kgs.

(3 marks × 4 = 12 marks)

**3. Write briefly on:**

- 3A. Functions of copper and zinc  
3B. HbS  
3C. Coenzymic roles of pyridoxine  
3D. Rickets

(2 marks × 4 = 8 marks)

