

# MANIPAL UNIVERSITY

## FIRST BDS DEGREE EXAMINATION – NOVEMBER 2012

### SUBJECT: GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY (ESSAY) (NEW REGULATION)

Saturday, November 24, 2012

Time: 14:15 – 17:00 Hrs.

Maximum Marks: 60

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

#### SECTION – A : HUMAN PHYSIOLOGY: 30 MARKS

1. Name the ascending tracts in the spinal cord and sensations carried by them. Trace the pathway for pain sensation. Add a note on referred pain. (3+4+3 = 10 marks)
- 2A. Define hypoxia. Explain the different types of hypoxia. (1+3 = 4 marks)
- 2B. Define glomerular filtration rate (GFR) and give its normal value. Explain the factors regulating GFR. (1+3 = 4 marks)
- 2C. What is deglutition? Explain the different stages of deglutition. (1+3 = 4 marks)
- 2D. Draw a labeled diagram of normal ECG. Explain the cause for each wave. (2+2 = 4 marks)
- 2E. Write briefly on:
- i) Hemophilia
  - ii) Gigantism
- (2+2 = 4 marks)

#### SECTION – B : BIOCHEMISTRY: 30 MARKS

- 3A. Discuss Vitamin D metabolism under the following headings:
- i) Biosynthesis and Activation
  - ii) Mechanism of action of Vitamin D on calcium absorption in the intestine
  - iii) RDA and deficiency
- 3B. Explain the digestion and absorption of dietary fat. ((2+2+2)+4 = 10 marks)

#### 4. Explain the following:

- 4A. Key reactions of gluconeogenesis.
- 4B. Structure of cell membrane.

4C. Transamination reaction with its significance.

4D. Formation of uric acid from adenosine monophosphate.

(3×4 = 12 marks)

**5. Answer the following questions:**

5A. Write briefly on Van den Bergh reaction

5B. Write the nutritional importance of dietary fiber

5C. Name the trace elements involved in the following disorders

i) Goitre

ii) Fluorosis

iii) Wilson's disease

iv) Microcytic hypochromic anemia

5D. Give complete biochemical reactions (one each) requiring the following coenzymes:

i) NADH

ii) FADH

(2×4 = 8 marks)

