

## MANIPAL UNIVERSITY

## FIRST MBBS DEGREE EXAMINATION – JUNE/JULY 2015

## SUBJECT: PHYSIOLOGY– PAPER I (ESSAY)

Monday, June 29, 2015

Time: 10:20 – 13:00 Hrs.

Maximum Marks: 80

**Essays:**

1. Describe the structure of organ of Corti. Explain how the auditory receptors are normally stimulated.

(5+5 = 10 marks)

2. Describe the following:

2A. Normal and aberrant sexual differentiation and development

2B. Hormones of lactation

(5+5 = 10 marks)

**3. Write short answers:**

3A. Regulation of aldosterone secretion

3B. Differences between the types of diabetes mellitus

3C. Causes of and differences between Osteomalacia and Osteoporosis

3D. Functions of ionic calcium

3E. Therapeutic uses of glucocorticoids

3F. Opioid peptides

3G. Genesis of generator potential in pacinian corpuscle

3H. Role of rhodopsin in visual function

3I. Alpha-gamma co-activation

3J. Internuclear connections of basal ganglia

3K. Cerebellar manifestations

3L. Sympathetic outflow

3M. Nonspecific nuclei of thalamus

3N. Sleep cycles

3O. Formation and functions of corpus luteum

(4 marks × 15 = 60 marks)



**MANIPAL UNIVERSITY**  
**FIRST MBBS DEGREE EXAMINATION – JUNE/JULY 2015**  
**SUBJECT: PHYSIOLOGY– PAPER II (ESSAY)**

Tuesday, June 30, 2015

Time: 10:20 – 13:00 Hrs.

Max. Marks: 80

- ✍ **All questions are compulsory. Write brief, clear and legible answers.**  
✍ **Illustrate your answers with diagrams and flow charts wherever appropriate.**

✍ **Essay questions:**

1. Define glomerular filtration rate (GFR). What is its normal value? Give one method which is ideal for measurement of GFR. What are the factors influencing GFR. (10 marks)

2. Define Blood pressure. Describe in detail short term regulation of arterial blood pressure. (10 marks)

3. **Short answer questions:**

3A. Compare facilitated diffusion and active transport.

3B. Explain heat gain mechanisms that occur when exposed to a cold environment.

3C. List the salient features of coronary circulation.

3D. Describe the functions of platelets.

3E. Draw and label an ECG in lead II. Write briefly on PR Interval.

3F. Define Anaemia. Explain any two types of anemia.

3G. What is pulmonary surfactant? Explain its role in Pulmonary function.

3H. Describe the ionic events of action potential in cardiac muscle. Add a note on refractory period of cardiac muscle.

3I. Explain Bohr's effect and its significance.

3J. Define Hypoxia. Add a note on different types of hypoxia.

3K. Describe the major types of blood groups. Add a note on Erythroblastosis foetalis.

3L. Define vital capacity and timed vital capacity giving their normal values. Add a note on their clinical significance.

3M. Briefly explain the Defecation reflex.

3N. Explain the role of bile salts in fat digestion.

3O. Describe in detail the second phase of deglutition.

(4 marks × 15 = 60 marks)

