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MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

III SEMESTER B.Tech. (BME) DEGREE END SEM. EXAMINATIONS, NOV/ DEC 2016.

SUBJECT: ANATOMY AND PHYSIOLOGY(BME 2105)

Friday, 2nd December 2016, 9 am to 12 noon

TIME: 3 HOURS

MAX. MARKS: 100

Instructions to Candidates:

- 1. Answer all questions from PART A and PART B. Use separate answer books for PART A and PART B.**
- 2. Draw labeled diagram wherever necessary**

PART-A ANATOMY (Max.Marks: 50)

- 1) Enumerate the parts of gastro intestinal tract. Add a note on stomach. 2+8**
- 2) Describe the right kidney under the following headings 5+5**
(i) External features. (ii) Relations.
- 3) Write a note on the following. 5+5**
(i) Autonomic nervous system. (ii) Cerebrospinal fluid (CSF) circulation.
- 4) Describe the anatomy of the following. 5+5**
(i) Right atrium. (ii) Testis.
- 5) Describe the anatomy of the following. 5+5**
(i) Structure of skin. (ii) Lymph node.

PART-B PHYSIOLOGY (Max. Marks: 50)

- 1a)** Draw a neat labelled diagram of a monophasic action potential and mention the ionic causes **5+2**
- 1b)** Mention TWO types of muscle contraction and give examples for each. **3**
- 2a)** Discuss oxygen transport from lung to tissue. **7**
- 2b)** What are the functions of upper air passages? **3**
- 3a)** Define 'Cardiac output' and give its normal value. Mention any TWO conditions for decrease in cardiac output. Describe the regulation of cardiac output **1+2+4**
- 3b)** Draw a normal limb lead II ECG and mention their causes. **3**
- 4a)** Discuss counter current multiplier system in formation of urine. **7**
- 4b)** What are the differences between cortical and juxtamedullary nephrons. **3**
- 5a)** Name the errors of refraction and show with the help of a diagram how each is Corrected. **7**
- 5b)** Draw a neat labelled diagram of the cross section of the spinal cord and show any THREE ascending tracts. **3**