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MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

1st SEMESTER M.Tech. (BME) DEGREE END SEM. EXAMINATIONS, NOVEMBER, 2017.

**SUBJECT: ANATOMY AND PHYSIOLOGY (BME 5101)
(REVISED CREDIT SYSTEM)**

Thursday, 16th November 2017: 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) Describe the left lung under the following headings. **5+5**
(i) External features (ii) Mediastinal surface relations.
- 2) Enumerate the parts of the female reproductive system. Add a note on the uterus. **2+8**
- 3) Write a note on the following **5+5**
(i) Anatomical Position (ii) Skeletal muscle.
- 4) Describe the anatomy of the following **5+5**
(i) Brain stem (ii) Cerebellum.
- 5) Describe the anatomy of the following **5+5**
(i) Pancreas (ii) Pituitary gland

PART-B. PHYSIOLOGY (Max. Marks: 50)

- 1a)** Draw a neat labelled diagram of neuromuscular junction and mention steps in neuromuscular transmission **7**
- 1b)** Classify nerve fibers. **3**
- 2a)** Draw a neat labelled diagram of unit of kidney and label its parts. List the steps in urine formation. **4+3**
- 2b)** What are the thermoregulatory changes occurring in the body in response to 'warm environment'. **3**
- 3a)** Name the factors influencing venous return. **7**
- 3b)** Name baroreceptors, where are they located. Mention the function of baroreceptors. **3**
- 4a)** Define hypoxia. Name the types and give examples for each. **1+2+4**
- 4b)** Draw a diagram and alveolocapillary membrane. **3**
- 5a)** What are the contents of middle ear and mention their function. **3+4**
- 5b)** Mention any three descending tracts and what are their functions. **3**