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# MANIPAL INSTITUTE OF TECHNOLOGY

## MANIPAL

*A Constituent Institution of Manipal University*

**III SEMESTER B.Tech. (BME) DEGREE MAKE-UP EXAMINATIONS, DECEMBER 2017.**

**SUBJECT: ANATOMY AND PHYSIOLOGY (BME 2105)**

**Saturday, 30<sup>th</sup> December 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 sulci gyri on the supero-lateral surface of the cerebrum. Add a note on its functional areas. 5+5**
- 2) Enumerate the parts of the male reproductive system. Add a note on the testis. 3+7**
- 3) Write a note on the following 5+5**  
(i) Structure of the Typical Neuron (ii) Cerebrospinal fluid (CSF) circulation
- 4) Describe the anatomy of the following. 5+5**  
(i) Right lung (ii) Pancreas
- 5) Describe the anatomy of the following. 5+5**  
(i) Left Kidney. (ii) Lymph node.

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

- 1a)** Discuss 'Excitation Contraction Coupling' in skeletal muscle. **7**
- 1b)** Write briefly on glial cells. **3**
- 2a)** Draw a neat labelled diagram of nephron and what are the two types give the differences. **4+3**
- 2b)** Define GFR glomerular filtration rate. **3**
- 3a)** Define blood pressure. What is the normal value? Mention short term regulation of BP. **2+5**
- 3b)** Mention factors influencing venous return. **3**
- 4a)** What are the forms in which CO<sub>2</sub> is transported? Discuss any one of them. **2+5**
- 4b)** Write briefly on cyanosis. **3**
- 5a)** What are the errors of refraction and how each is corrected? **7**
- 5b)** Mention three ascending tracts of the spinal cord. Draw the pathway of any one. **3**