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**MANIPAL INSTITUTE OF TECHNOLOGY**  
(Manipal University)  
Manipal – 576 104



**V SEMESTER B.Tech. (BME) DEGREE MAKE UP EXAMINATIONS, DEC/JAN 2015-16**

**SUBJECT: BASIC CLINICAL SCIENCES II (BME 301)**  
(REVISED CREDIT SYSTEM)

**Tuesday, 29<sup>th</sup> December, 2015 : 2.00 to 5.00 pm**

**TIME: 3 HOURS**

**MAX. MARKS: 100**

**Instructions to Candidates:**

1. Answer any **FOUR** full questions from **PART- A**, any **THREE** full questions from part **B** and any **THREE** full questions from **PART- C**. Use separate answer books for **PART-A**, **PART-B** and **PART-C**.
2. Draw labeled diagram wherever necessary.

**PART- A. OPHTHALMOLOGY (Max. Marks 40)**

- 1) What is LASER? Discuss three ways laser act in the eye with an example of the laser used and the disease it is used for. **1+9**
- 2) Write short note on **5+5**  
(i) Direct Ophthalmoscope. (ii) Contact lens.
- 3) Describe the process of Vitrectomy. Enumerate five uses of Vitrectomy in Ophthalmology. **5+5**
- 4) What is perimetry? Name any two types of perimeters. Name two conditions where they are used. **6+2+2**
- 5) Write short notes on **5+5**  
(i) Optical Coherence Tomography (OCT).  
(ii) Fundus Camera.

**PART- B. ORTHOPAEDICS (Max. Marks 30)**

- 1) Discuss the properties of implant materials used in fracture fixation. **10**
- 2) Discuss the anatomy of joints with respect to arthritis. Discuss the prosthesis in joint replacement. **10**
- 3) Discuss traction and muscle strengthening exercises in Orthopaedics. **10**
- 4) Discuss Arthroscope and its circuit. **10**

**PART-C. SPEECH AND HEARING (Max. Marks 30)**

- 1)** Differentiate cochlear implant and Hearing aid. Explain digital signal processing in hearing aids. **10**
- 2)** Discuss the working principle and instrumentation of brainstem evoked response audiometry (BERA). **10**
- 3)** Discuss the role of biomedical engineers in the field of speech and hearing **10**
- 4)** Explain **5+5**
  - (i) AAC
  - (ii) EPD's