

**GANPAT UNIVERSITY**  
**B.TECH. 8<sup>TH</sup> SEM. BIOMEDICAL AND INSTRUMENTATION ENGINEERING**  
**REGULAR EXAMINATION MAY/JUNE 2013**  
**BME 803: Clinical Engineering**

TIME: 3 Hours

Total marks: 70

**INSTRUCTIONS:**

1. Use separate answer sheets for the two sections
2. Figures on the right side indicate marks
3. Please explain with the help of diagram wherever it is necessary
4. Each sub-question carries equal marks unless it is mentioned

**SECTION – I**

**Que.1 Write answers of the following questions. 12**

- A** Provide the component of information system.
- B** Explain the methods to test the medical device from the EMI due to wireless telecommunication device.

**OR**

**Que.1 Write answers of the following questions. 12**

- A** Explain the factors which are responsible for the severity of the EMI.
- B** With an example explain that how 'an usual source' can affect the wireless medical system.

**Que.2 Write answers of the following questions. 11**

- A** Explain the methodology for in-vitro testing of the implantable cardiac device.
- B** Provide the privacy and security considerations for information system management.

**OR**

**Que.2 Write answers of the following questions. 11**

- A** Explain the general classes of customer service calls.
- B** Write a note on physiological monitoring system configuration.

**Que.3 Write answers of the following questions. 12**

- A** Explain the features of application software of clinical information system.
- B** Enlist various types of electromagnetic radiators in the hospital.
- C** Compare the transport and central station monitors.

SEAT NO: \_\_\_\_\_

**SECTION - II**

**Que.4 Write answers of the following questions.**

- A** Explain the causes of medication errors.
- B** Explain the risk management program structure.

**12**

**OR**

**Que.4 Write answers of the following questions.**

- A** Explain clinical engineering's role as system management, equipment management and patient safety.
- B** Explain various tasks performed by clinical engineer.

**12**

**Que.5 Write answers of the following questions.**

- A** Explain the role of clinical engineering within the hospital organization.
- B** Provide the remote diagnostic (decision support) process flow.

**11**

**OR**

**Que.5 Write answers of the following questions.**

- A** Explain the details of System Risk Model.
- B** Write the role of HFMEA and write the steps of it.

**11**

**Que.6 Write answers of the following questions.**

- A** Explain the role of JCAHO in patient safety.
- B** Write a note on future of clinical engineer.

**12**

-----**END OF THE PAPER**-----