

M.Sc. F.Y. (Electronics) (New CBCS Pattern) Semester - II
PSCELET06 - Paper-II : Biomedical Instrumentation

P. Pages : 2

Time : Three Hours



GUG/S/23/11200

Max. Marks : 80

- Notes : 1. All questions are compulsory and carry equal marks.
2. Draw neat and label diagrams wherever necessary.

Either:

1. a) What is bioelectrical signal? How does it generate in human body? **8**
b) Draw the block diagram of man instrument system for biomedical application and explain it. **8**

OR

- c) Explain any two transducers for body temperature measurement. **8**
d) What is biometrics? Explain operation of biometric system. **8**

Either:

2. a) Draw block diagram of electronic recording system and explain the function of each block. **8**
b) What is Preamplifier? Discuss the role of preamplifier in recording system. **8**

OR

- c) What is noise in recording system? Explain type of noise. **8**
d) Explain the importance of oscilloscope in medical display system. Explain the concept of storage oscilloscope. **8**

Either:

3. a) Explain the working of MRI. With suitable diagram. **8**
b) What is leakage current? **8**

Explain:

- i) Enclosure leakage current.
ii) Earth leakage current.
iii) Patient leakage current.

OR

- c) Describe working of x-ray tomography with suitable diagram. **8**
- d) Give the block diagram of Foetus monitoring system and explain its working. **8**

Either:

- 4. a) What is ECG? Draw block diagram of ECG machine and explain it. **8**
- b) Explain the principle working of hemodialysis machine. **8**

OR

- c) Explain EEG machine with suitable block diagram. **8**
 - d) Explain any two types of implantable peacemaker. **8**
- 5. a) Explain the LVDT as a pressure transducer. **4**
 - b) Write a note on multichannel display system. **4**
 - c) Write precautions to minimize electronic shock hazard. **4**
 - d) Write a note on EMG. **4**
