

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

P. Pages : 2

Time : Three Hours



**GUG/W/23/11200**

Max. Marks : 80

- Notes :
1. All questions are compulsory and carry equal marks.
  2. Draw well labeled diagrams wherever necessary.
  3. Use of calculator is allowed.

**Either:**

1. a) Describe how bioelectric potentials are generated in the human body. **8**  
b) What is Biometrics? Explain the operation of a biometric Machine. **8**

**OR**

- c) What is pressure transducer? Explain construction and working of pressure transducer. **8**  
d) Explain the use of any four transducers for data acquisition. **8**

**Either:**

2. a) Explain the block diagram of basic electronics recording system. **8**  
b) Differentiate between preamplifier and main amplifier. Explain the role of preamplifier in the recording system. **8**

**OR**

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

**Either:**

3. a) Describe the X-ray computed tomography. **8**  
b) What is magnetic resonance imaging system (MRI)? Explain NMR imaging system with suitable diagram. **8**

**OR**

- c) What is leakage current? Explain its effect on human body. **8**  
d) Draw the block diagram of abdominal Foetal electrocardiogram processing circuit and explain. **8**

**Either:**

4. a) Draw block diagram of EEG machine and explain its operation. 8  
b) What is ECG? Explain block diagram of ECG machine. 8

**OR**

- c) Draw block diagram of EMG machine and explain its operation. 8  
d) Explain the principle working of hemodialysis machine. 8
5. a) Explain man-instrument system in biomedical. 4  
b) Write a note on multichannel display system. 4  
c) Explain the working of gastroscope. 4  
d) Explain the working of cardiac pacemaker. 4

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