

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 |
