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SEAT No. :

P136

[Total No. of Pages : 2

**Oct/B.E./Insem - 61**  
**B.E. (Electronics)**  
**BIOMEDICAL INSTRUMENTATION**  
**(2012 Pattern) (Semester - I)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) *Answer three questions Q1 or Q2, Q3 or Q4, Q5 or Q6.*
- 2) *Neat diagram must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Use of calculator is allowed.*
- 5) *Assume suitable data if necessary.*

**Q1) a)** Name the different types of Biomedical signals. Give the advantages of these signals. **[5]**

b) What is polarization and depolarization in the cell structure. **[5]**

OR

**Q2) a)** Name the electrodes used to measure ECG, PCG and respiration measurement. **[5]**

b) Describe the working of chemical sensors to measure pH-value. **[5]**

**Q3) a)** What is the function of Atrium and ventricles in heart. **[5]**

b) Draw and Explain the function of Baroreceptor. **[5]**

OR

**Q4) a)** Draw & Explain the concept of Eintrover triangle. **[5]**

b) What is the function of ECG Amplifier. **[5]**

**P.T.O.**

**Q5) a)** What is Neuron? Draw the structure and give its significance. **[5]**

**b)** Explain the 10-20 electrode placement system for EEG measurement. **[5]**

OR

**Q6) a)** Explain the circuit design for EEG. **[5]**

**b)** What are the advantages of EEG Amplifier? **[5]**

