

**B. TECH. (CBCS - 2014 COURSE) SEM - VIII (ELECTRONICS)**  
**: SUMMER - 2018**  
**SUBJECT: BIOMEDICAL ENGINEERING**

Day: **Tuesday**  
Date: **05/06/2018**

**S-2018-4682**

Time: **02.30 PM TO 05.30 PM**  
Max Marks. 60

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**N.B. :**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Assume suitable data, if necessary.
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- Q.1** What is automatic nervous system and sensory nervous system? Draw the diagram of nervous system and explain each part with its function. (10)
- OR**
- Q.1 a)** Define following with respect to frequency and amplitudes: (06)  
i) ECG      ii) EEG      iii) EMG
- b)** What are the functions of lymphatic system? (04)
- Q.2** Draw the diagram showing relationship between ECG, PCG and blood pressure as a function of time. List the popularly used blood pressure measurement techniques and explain its importance. (10)
- OR**
- Q.2 a)** Classify ECG lead system. Why right leg is grounded while recording ECG signal? (03)
- b)** List various electrodes used to record ECG signal. Explain them with diagram. (07)
- Q.3 a)** Compare External and internal defibrillators on the basis of parameters used. (05)
- b)** Define the term fibrillation. How the cardioverter is used to overcome this situation? (05)
- OR**
- Q.3** Write short notes on:
- a)** Pacemaker Leads (05)
- b)** Defibrillator electrodes (05)
- Q.4** Explain the architecture of ICU and discuss the same in detail with layout. (10)
- OR**
- Q.4 a)** Mention the importance of patient monitoring in hospital. State various parameters need to be monitored. (05)
- b)** Draw a layout diagram of NICU. State the instruments preferred. (05)
- Q.5** What is artificial kidney? What are the types of dialyzers used in hemodialysis? (10)
- OR**
- Q.5 a)** How PH is measured? Explain it with diagram. (05)
- b)** Draw block diagram of colorimeter and explain. (05)
- Q.6** Why shielding is necessary in medical equipments and in its accessories. Explain its effects on waveform and display measurements. (10)
- OR**
- Q.6 a)** Name safety measures to be taken to avoid any accidents while operating equipments in hospitals. (05)
- b)** Explain the block diagram for short wave diathermy machine. (05)

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