

Total No. of Questions :10]

SEAT No. :

P118

[5871]-621

[Total No. of Pages : 2

B.E. (E. & T.C.)

BIOMEDICAL ELECTRONICS

(2015 Pattern) (Semester - II) (Elective - IV) (404192B)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.
- 2) Neat diagrams 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) List different Bio potential electrode. Explain drawback of surface electrode. [5]
b) Explain cell structure with Bio cell potential [5]

OR

- Q2)** a) Explain the technique to reduce the artifacts in bio signal. [5]
b) Explain in detail bipolar lead configuration to acquire ECG. [5]

- Q3)** a) Explain various heart sounds generated in the pumping activity of heart. [5]
b) Explain the EEG application for sleep apnea. [5]

OR

- Q4)** a) Explain β, δ in relation with EEG. [5]
b) Write short note on phonocardiography. [5]

- Q5)** a) Explain in detail the write leg drive mechanism. [8]
b) Explain grounding & shielding techniques for medical equipment. [8]

OR

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- Q6)** a) Explain in detail the isolation amplifier used in ECG recording system. [8]
b) Explain the technique to cancel out maternal ECG from fetal ECG. [8]

- Q7)** a) Explain in detail the method for muscle noise filtering. [8]
b) Explain ECG classification for normal and abnormal state using Multilayer Perception. [8]

OR

- Q8)** a) Write down the algorithm for QRS detection. [8]
b) What are the objectives of Biomedical signal analysis? Explain ECG signal processing for base line interference. [8]

- Q9)** a) What is systolic and diastolic pressure? Explain non - invasive blood pressure measurement technique. [10]
b) Explain operation of X-ray machine with help of neat block diagram. [8]

OR

- Q10)** a) Classify pacemaker on the basis of pacing modes & explain any one in brief. [10]
b) Explain merits & demerits of MRI system. [8]
