

Total No. of Questions : 8]

SEAT No. :

P3620

[Total No. of Pages : 2

[4959] - 1106
B.E. (Electronics)
Biomedical Instrumentation
(2012 Pattern) (Elective - I(C))

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.
- 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) Discuss important factors to be considered in design of medical instrument. [10]
- b) Write type of electrodes for measurement of EEG, ECG, EMG & PCG. [4]
- c) Explain in detail the muscle contraction mechanism. [6]

OR

- Q2)** a) With equivalent circuit explain measurement of two biomedical potential. [8]
- b) Explain in detail the Einthoven triangle. [6]
- c) Write a short note on Electromyography. [6]

- Q3)** a) Classify pacemaker on the basis of pacing mode and explain in brief. [8]
- b) Discuss DC and AC Defibrillators while explaining the term defibrillation. [8]

OR

- Q4)** a) Explain computerized central patient monitoring system. [8]
- b) Give salient features of electromagnetic blood flow meter & explain it. [8]
- Q5)** a) Describe Conductivity method of electronic blood cell counting. [8]
- b) Write short note on electron microscope. [8]

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OR

- Q6)** a) P_{O_2} , P_{CO_2} , PH electrodes are to be used in blood gas analysis. Discuss the complete scheme. [8]
b) Discuss Various issue of noise pollution around hospital. [8]
- Q7)** a) What is Biotelemetry? Explain the objective & component of Biotelemetry system. [10]
b) Explain CT scanner along with its working principle. What are the advantages of CT scanner over conventional X ray? [8]

OR

- Q8)** a) Draw block diagram of MRI machine. Describe how MRI scanner work & give its advantages. [10]
b) Explain in detail the application of LASER in medical application. [8]

