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) Po2, Pco2, 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]**

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