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Roll No. :

324843(24)

APR-MAY 2022

B. E. (Eighth Semester) Examination, 2020

(New Scheme)

(Elect. Engg. Branch)

BIO MEDICAL INSTRUMENTATION

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

***Note : Part (a) of each question is compulsory.
Attempt any two parts from (b), (c) and (d)
of each question.***

Unit-I

1. (a) Describe the purpose of use of electrode paste. 2
- (b) Explain the importance to study Biomedical Instrumentation. 7

[2]

(c) Elaborate the generation of biopotential within the human body. How they are propagated? 7

(d) Describe the three basic types of electrodes for measurement of bioelectric potential. 7

Unit-II

2. (a) What is transducers? 2

(b) Show the relationship among displacement, velocity and acceleration. 7

(c) Write down any transducers for body temperature measurement. 7

(d) Differentiate active and passive transducers. Explain working principle of any active transducers. 7

Unit-III

3. (a) What do you mean by EOG and EMG? 2

(b) Explain with neat sketch EEG Explain the EEG with the different level of consciousness. 7

(c) State the requirement of Physiological Signal amplifiers. 7

[3]

(d) Draw the circuit diagram of an ECG amplifier and explain its action. 7

Unit-IV

4. (a) Human heart is divided in how many chambers, name them? 2

(b) Describe how capacitance manometer measures blood pressure? 7

(c) What is plethysmograph? Discuss in detail the working of plethysmograph. 7

(d) Discuss various respiratory therapy equipment. 7

Unit-V

5. (a) Give the list of elements of intensive care monitoring. 2

(b) What is Pacemakers? Classify various types of pacemakers. 7

(c) What is defibrillator? Briefly explain the different types of defibrillators. 7

(d) Discuss various applications of LASER in different fields of medicine. 7