Reg. No._____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SIXTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

Course Code: EE372

Course Name: BIOMEDICAL INSTRUMENTATION

Max. Marks: 100 Duration: 3hours

PART A

Answer all questions. 5 marks each.

1. Discuss the functional organisation of peripheral nervous system.
2. With suitable examples write about chemical biosensors and chemicalanalytes with respect to blood
3. Explain the effect of electrode potential on biosignals.
4. What is blood pressure? How it is measured?
5. Write brief note on measurement of nerve conduction velocity.
6. Explain the properties and biomedical applications of X-rays.
7. Discuss the principle and application of diathermy.
8. What do you mean by telemedicine?

PART B

Answer any two questions.10 marks each.

9. a) Discuss what are the problems encountered in measurement on biological systems. (6)
   b) Explain the construction and working principle of microelectrodes (4)
10. a)Draw the block diagram of biomedical instrumentation system and explain the functions of each block (6)
    b) Briefly explain the physiological functions of human respiratory system (4)
11. a)What is cardiac vector ? Explain ECG leads with necessary figures. (6)
    b) Mention the applications of floating and flexible type surface electrodes with necessary figures. (4)

PART C

Answer any two questions.10 marks each.

12. a)Explain auditory method of blood pressure measurements with necessary figure (5)
    b) Explain any one method to measure blood flow (5)
13. a) Discuss electrical conduction path way of heart and explain the working principle of artificial cardiac pacemaker with necessary figures (10)

14. Write short note on
    a) Respiratory pneumograph (5)
    b) Photo plethysmograph (5)

PART D

Answer any two questions.10 marks each.

15. a) Mention different types of ventilators and write brief notes on the biomedical applications (5)
    b) List the main types of blood test and explain each (5)
16. a) With the help of a block diagram explain the basic principle of Computer tomograph (6)
    b) Write short note on infant incubator (4)
17. Explain physiological effects of electric currents and write brief notes on various susceptibility parameters. (10)

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