

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SIXTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), MAY 2019

Course Code: EE372

Course Name: BIOMEDICAL INSTRUMENTATION

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks.

- | | | Marks |
|---|--|-------|
| 1 | Explain biochemical system of human body. | (5) |
| 2 | Explain Einthoven triangle. | (5) |
| 3 | With the help of neat diagram explain ultrasonic method of blood pressure measurement. | (5) |
| 4 | What is the difference between internal and external pacemakers? | (5) |
| 5 | Enumerate uses of X-rays-diagnostic still picture. | (5) |
| 6 | Enumerate commonly used chemical tests on blood cells. | (5) |
| 7 | Explain telemedicine. | (5) |
| 8 | Explain basic principle of ultrasonic imaging system. | (5) |

PART B

Answer any two full questions, each carries 10 marks.

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|----|---|-----|
| 9 | a) Draw block diagram and explain different components of man-instrument system. | (7) |
| | b) Enumerate different rhythms in EEG with frequency ranges. | (3) |
| 10 | a) Explain equivalent circuit of bio-potential electrode interface. | (5) |
| | b) Write a short note on 1) resting potential 2) action potentials. | (5) |
| 11 | a) Describe different bio-potential electrode used to measure bioelectric events. | (6) |
| | b) Explain events related to different waves in ECG | (4) |

PART C

Answer any two full questions, each carries 10 marks.

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|----|---|-----|
| 12 | a) With the help of neat diagram explain phonocardiography | (5) |
| | b) Explain with the help of neat diagram, impedance plethysmograph for measurement of blood flow. | (5) |
| 13 | a) What is blood pressure? How it is measured? | (5) |
| | b) Explain DC defibrillator with the help of neat diagram | (5) |

- 14 a) Explain standard 10-20 electrode placement system for EEG measurement (5)
- b) Explain spirometer for measurement of respiratory parameters (5)

PART D

Answer any two full questions, each carries 10 marks.

- 15 a) Explain heart lung machine with the help of neat diagram. (7)
- b) What is infant incubator? How it works? (3)
- 16 a) With the help of a block diagram explain the basic principle of Computer tomograph. (5)
- b) Explain different methods of electric accident prevention. (5)
- 17 a) Explain in detail different clinical tests conducted on blood. (10)
