

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth Semester B.Tech Degree (Hons.) Examination June 2020

Course Code: EE372**Course Name: BIOMEDICAL INSTRUMENTATION**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer all questions, each carries 5 marks.*

Marks

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| 1 | With neat block diagram explain man instrument system. | (5) |
| 2 | Draw and explain the equivalent circuit of biopotential electrodes between electrodes & skin. | (5) |
| 3 | Explain how phonocardiography helps in medical diagnosis. | (5) |
| 4 | Write a short note on respiratory pneumography. | (5) |
| 5 | What is surgical diathermy? Explain the various electro surgery techniques available. | (5) |
| 6 | Explain the working of lithotripsy machine. | (5) |
| 7 | What is the difference between micro shock and macro shock? | (5) |
| 8 | Explain the working of Spectrophotometer. | (5) |

PART B*Answer any two full questions, each carries 10 marks.*

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| 9 | a) Distinguish between action potential and resting potential. Explain the propagation of action potential. | (6) |
| | b) What is sodium pump? | (4) |
| 10 | Explain with neat diagram the electro-conduction system of the heart | (10) |
| 11 | a) Compare EMG and ERG | (4) |
| | b) Explain ECG machine working with neat block diagram and also draw the Einthoven triangle. | (6) |

PART C*Answer any two full questions, each carries 10 marks.*

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| 12 | a) Explain how nerve conduction velocity is measured. | (5) |
| | b) Explain how Spiro meter can be used to measure respiratory volume. | (5) |
| 13 | Explain any two types of indirect method of blood pressure measurement. | (10) |
| 14 | a) What is Plethysmograph? Explain full body Plethysmograph with illustration. | (5) |

- b) List different waves in EEG recording. Explain with block diagram how EEG recorder works. (5)

PART D

Answer any two full questions, each carries 10 marks.

- 15 With a neat block diagram explain the working of Ultrasonic Imaging System. (10)
- 16 a) Write short notes on a) telemedicine, (5)
b) Haematocrit (5)
- 17 a) Explain the working of Heart lung machine (5)
b) Give examples of the Physiological Effects of electrical current. (5)
