

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Sixth Semester B.Tech Degree Regular and Supplementary Examination July 2021

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

Max. Marks: 100

Duration: 3 Hours

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

Marks

- |   |   |     |
|---|---|-----|
| 1 | With the help of a neat diagram write about physiology of respiratory system.                               | (5) |
| 2 | With the help of a neat diagram of the Einthoven triangle, mention the necessity of the Einthoven triangle. | (5) |
| 3 | Write a short note on photo electric plethysmography.   | (5) |
| 4 | With the help of a neat diagram write about DC Defibrillator.   | (5) |
| 5 | With help of Suitable diagram write about principle X-Ray generation.                                       | (5) |
| 6 | List various components in infant incubators? Mention function of components.                               | (5) |
| 7 | Write a short note on working of spectrophotometer.   | (5) |
| 8 | Describe about various components of Tele-medicine system.  | (5) |

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

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|----|---|------|
| 9  | a) Identify various frequency ranges in Electro Encephalogram. Mention about each frequency range.                                | (5)  |
|    | b) With help of relevant diagrams write about anatomy of human nervous system.  | (5)  |
| 10 | List various components of Electro Cardiography Machine. With the help of block diagram and graph write about working of Machine. | (10) |
| 11 | a) Identify the various problems encountered in biomedical measurements?  | (5)  |
|    | b) With relevant diagrams explain about different types of skin surface electrodes used to measure bio potential.                 | (5)  |

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

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|----|--|-----|
| 12 | a) Identify the use of phonocardiography. Write a short note about it. | (5) |
|----|--|-----|

- b) Identify how a fibre optic intravascular pressure sensor helps to measure Blood pressure. (5)
- 13 Identify various components of Electro Encephalogram (EEG), With the help of block diagram write about role of each component. (10)
- 14 a) List out any five respiratory parameters. (5)
- b) Write a short note on Impedance plethysmographs. (5)

**PART D**

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

- 15 a) With the help of a suitable diagram write how a hemodialysis helps a patient. (5)
- b) Enumerate the various uses of X-rays. (5)
- 16 a) With help of Suitable diagram write about principle ultrasonic imaging system. (5)
- b) Enumerate different applications of Telemedicine. (5)
- 17 Enumerate about physiological effects of electric currents & write briefly about various susceptance parameters. (10)

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