

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018

Course Code: AE403

Course Name: BIOMEDICAL INSTRUMENTATION

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

Marks

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| 1 | (a) What is resting potential and action potential? Explain the propagation of action potential. | (8) |
| | (b) With the help of diagrams explain different types of microelectrodes. | (7) |
| 2 | Describe the following: | |
| | (a) Plethysmography | (7) |
| | (b) Defibrillators | (8) |
| 3 | a) Explain the working of synchronous and asynchronous pace maker with block diagram. | (8) |
| | b) Describe different types of surface electrodes used for biomedical application with neat diagram. | (7) |

PART B

Answer any two full questions, each carries 15 marks.

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| 4 | (a) What are oximeters? Describe the working of any one type of oximeter | (8) |
| | (b) Describe the working of ultrasonic diathermy unit | (7) |
| 5 | (a) Explain the causes of electric shock hazards in hospitals. What are the precautions to minimize electric shock hazards? | (15) |
| 6 | (a) Explain different lung volumes in human respiratory system | (8) |
| | (b) What is biotelemetry? How patient monitoring can be realized using bio telemetry? | (7) |

PART C

Answer any two full questions, each carries 20 marks.

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| 7 | a) With neat diagram explain the principle and working of chromatography | (10) |
| | b) Explain blood pO ₂ measurement. | (10) |
| 8 | a) Explain with neat diagram the working of X-ray machine. Describe the application of X-rays in medical field. | (15) |
| | b) What are the clinical applications of laser? | (5) |
| 9 | a) With neat diagram explain any two methods of blood cell counting. | (10) |
| | b) Explain computer tomography with a necessary diagram | (10) |
