

Reg No.: _____

Name: _____

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

Course Code: EC365

Course Name: BIOMEDICAL ENGINEERING

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

Marks

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|---|---|------|
| 1 | a) Explain about electrode-electrolyte interface and the electrical activity associated with one contraction in a muscle. | (10) |
| | b) Explain direct blood pressure measurement. | (5) |
| 2 | a) What is a microelectrode ? Explain any two. | (10) |
| | b) Explain ultrasonic blood flow meters with neat diagram. | (5) |
| 3 | a) With suitable diagram explain electro conduction system of heart. | (10) |
| | b) Draw the unipolar lead system. | (5) |

PART B

Answer any two full questions, each carries 15 marks.

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|---|---|------|
| 4 | a) Explain 10-20 electrode system with suitable diagram. | (10) |
| | b) Explain about spectrophotometer . | (5) |
| 5 | a) What are different respiratory parameters ? Explain. | (7) |
| | b) What is meant by nerve conduction velocity. What is its significance ? | (3) |
| | c) Explain ventilator parameters? | (5) |
| 6 | a) What is the difference between haemodialysis and peritoneal dialysis? | (10) |
| | b) Explain about ventricular defibrillation. | (5) |

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) How ultrasonic wave propagates through tissues. (8)
- b) Explain X-Ray imaging. (8)
- c) Explain basic approaches to protection against shock. (4)
- 8 a) Explain about micro shock hazards. (8)
- b) Draw the diagram of Single channel telemetry and explain. (8)
- c) What is real time ultrasonic imaging? (4)
- 9 a) Explain the biological effects of NMR imaging. (7)
- b) What is basic pulse echo system? (5)
- c) What are macro shock hazards? (8)
