

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Fifth Semester B.Tech Degree (S,FE) Examination January 2023 (2015 scheme)



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

- | | | |
|------|---|-----|
| 1 a) | With the help of necessary diagrams explain resting and action potentials | (8) |
| b) | Explain different types of Body-Surface Electrodes | (7) |
| 2 a) | What are Korotkoff Sounds? Explain the different phases of Korotkoff Sounds | (8) |
| b) | Explain the block diagram of ECG Machine | (7) |
| 3 a) | Explain the block diagram of biomedical instrumentation system | (8) |
| b) | With neat diagram, explain the working of Electromagnetic blood flow meters | (7) |

PART B*Answer any two full questions, each carries 15 marks.*

- | | | |
|------|--|-----|
| 4 a) | What is EMG? Explain the EMG measurement using block diagram | (8) |
| b) | Explain the working of Photoelectric plethysmograph | (7) |
| 5 a) | Explain the working of Defibrillator Circuit | (8) |
| b) | Explain the block diagram of positive pressure ventilator | (7) |
| 6 a) | Explain the Coulter Method of Blood Cell Counting | (8) |
| b) | Explain the block diagram of Surgical diathermy machine | (7) |

PART C*Answer any two full questions, each carries 20 marks.*

- | | | |
|------|---|------|
| 7 a) | Explain Computed Tomography. What are the advantages and disadvantages of Computed Tomography | (10) |
| b) | Explain the block diagram of ultrasound scanner | (10) |
| 8 a) | Explain the principle of magnetic resonance imaging. Give a detailed explanation on the main components of MRI? | (12) |
| b) | Explain the block diagram of telemetry system for ECG and respiration | (8) |
| 9 a) | Explain the block diagram of X-ray machine. What are the properties of X-ray? | (10) |
| b) | What are the sources of electrical hazards in hospitals? | (10) |
