

Code No: PT41041

R13

Set No. 1

IV B.Tech I Semester Regular/Supplementary Examinations, Oct/Nov - 2018

BIO-MEDICAL ENGINEERING
(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 70

Question paper consists of Part-A and Part-B

Answer ALL sub questions from Part-A

Answer any THREE questions from Part-B

PART-A (22 Marks)

1. a) What is the need of biomedical instrumentation? [4]
b) What is the use of electrode gel? [4]
c) Explain different heart sounds. [4]
d) What is diathermy? [3]
e) Write note on CAT scan. [3]
f) What is the difference between micro shock and macro shock? [4]

PART-B (3x16 = 48 Marks)

2. a) Illustrate the cross section of a depolarized cell. [8]
b) What is the effect of transducer on the measurement of a living system? Explain. [8]
3. a) Define the following terms:
(i) Propagation rate
(ii) Nerve conduction rate [8]
b) Distinguish between internal and external bio-potential electrodes. [8]
4. a) Explain the methods of measurement of blood flow and cardiac output. [8]
b) Draw the electrocardiogram waveform and explain. [8]
5. a) What is fibrillation? Describe the operation of DC defibrillator with a neat sketch. [8]
b) Discuss the tonometer for eye pressure measurement. [8]
6. a) Explain the biotelemetry system with neat diagram. [8]
b) Discuss the X-ray and Radio-Isotope instruments. [8]
7. a) What is the use of bio-potential amplifiers? Explain. [8]
b) What are the physiological effects of electrical shock? Explain. [8]

