

VKR/KS/13/3284/3618

**Faculty of Engineering & Technology
Eighth Semester B.E. (Electrical Engg.)/
Eighth Semester B.E. P.T. (Electrical)
Examination
BIOMEDICAL ENGG.
(Elective—II)
Sections—A & B**

Time—Three Hours]

[Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
- (2) Answer **THREE** questions from Section A and **THREE** questions from Section B.
- (3) Assume suitable data wherever necessary.
- (4) Illustrate your answers wherever necessary with the help of neat sketches.

SECTION—A

1. Discuss the problems encountered in measuring living system.

13

2. (a) How action and resting potential generated ?
Explain with the help of neat sketch. 7
- (b) Explain the role of 'pacemaker' and differentiate
between internal and external pacemaker. 6
3. (a) Write short note on : Amplifier used in Medical
Instrumentation. 6
- (b) Explain various types of ECG recorders. 7
4. (a) Explain how ultrasound can be used for blood
flow measurement. 7
- (b) What are the different methods of respiration rate
measurement ? Explain any one with schematic
diagram. 6
5. Write short notes on (any **TWO**) :—
- (i) Electrocardiogram (ECG)
- (ii) Electroencephalogram (EEG)
- (iii) Electromyogram (EMG). 14

SECTION—B

6. (a) Explain the merits and demerits of direct and
indirect method of blood pressure measurement. 6
- (b) Explain briefly blood pH measurement method.
What is its utility ? 7

7. (a) Explain briefly working of Blood Gas Analyser. 7
- (b) Explain in detail 'Diathermy' and 'Thermography'. 6
8. (a) What do you mean by Stimulator ? Explain muscle
stimulator. 6
- (b) Explain in detail : Phonocardiography. 7
9. Explain cardiac pacing ? Classify the pacemaker and
explain it. What do you mean by pacing mode ? Explain
Each mode in detail. 13
10. Write short notes on (any **THREE**) :— 14
- (a) Nerve stimulator
- (b) Myoelectric control of paralysed muscles.
- (c) CT Scan.
- (d) Blood pump respiration control.