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Question Paper Code: 1216178

B.E. / B.Tech. DEGREE EXAMINATIONS, NOV / DEC 2024

Sixth Semester

Biomedical Engineering

U20BM602 – ADVANCED BIOMEDICAL INSTRUMENTATION

(Regulation 2020)

Time: Three Hours

Maximum: 100 Marks

Answer ALL questions

PART – A

(10 x 2 = 20 Marks)

1. Distinguish between R wave triggered and R wave inhibited Pacemaker.
2. Draw the schematic diagram of Electrocardiograph.
3. Write short notes about evoked potential.
4. Illustrate the applications of EEG biofeedback mechanism.
5. Infer the technique to measure the plantar pressure in foot.
6. List out any four types of gait.
7. Infer the relationship between lung volume and lung capacity.
8. List the types of ventilators.
9. Write short notes about let go current.
10. List the different types of hazards.

PART – B

(5 x 16 = 80 Marks)

11. (a) (i) Discuss in detail about the working of phonocardiography. (8)
(ii) Illustrate the working principle of implantable pacemaker and its types. (8)

(OR)

- (b) Describe the various modes and working of DC defibrillator. (16)

12. (a) Elucidate the schematic diagram of Electroencephalograph and its placement of electrodes. (16)

(OR)

- (b) Interpret the working of Magneto Encephalography (MEG). (16)

13. (a) Describe the working and analysis of Electromyography (EMG). (16)

(OR)

- (b) Discuss the various dynamic measurement of muscle. (16)

14. (a) (i) Illustrate the working mechanism of spirometer. (8)

- (ii) Discuss in detail about the working of two types Pneumotachometer. (8)

(OR)

- (b) Explicate the working principle of micro processor based ventilators and its modes. (16)

15. (a) Discuss the various physiological effects of electrical currents. (16)

(OR)

- (b) (i) Distinguish between micro shock and macro shock. (8)

- (ii) Describe the path of leakage current in the case of discontinuous ground and also explain the effects of radiation hazard. (8)