

P.G.DIP. in Biomedical Electronics Semester-I Examination
1 BME 4 BIOMEDICAL INSTRUMENTATION

Time : Three Hours]

[Maximum Marks : 40

N.B.:— (1) All questions carry equal marks.

(2) Solve one question from each alternative.

(3) Draw neat sketches wherever necessary.

1. (a) Explain the various components in basic medical instrumentation system. 4
(b) Explain the use of microprocessor in medical instrumentation system. 4

OR

- (p) Draw the block diagrams of PC based medical instrumentation system and explain various blocks. 8
2. (a) Explain the electrodes for ECG medical system. 4
(b) Explain the origin of bioelectric signals. 4

OR

- (p) Explain the electrode for EEG system. 4
(q) Explain pregelled disposable electrode. 4
3. (a) Explain the construction and operation of ECG (Electro cardiograph) with block diagram. 8

OR

- (p) Explain construction and operation of (VCG) vector cardio graph with diagram. 4
(q) Explain construction and operation of (PCG) phono cardiograph with diagram. 4
4. (a) Explain the advantages of NMR imaging system. 4
(b) Explain the gradient system for coding. 4

OR

- (p) Explain the various methods of image reconstruction technique. 4
(q) Explain following NMR components :
(i) Magnet
(ii) RF transmitter. 4
5. (a) Explain the working principle of X-Ray tomography. 4
(b) Explain the operation of linear accelerator machine. 4

OR

- (p) Explain the components of Cobal-60 machine. 8