

- Q.27 What is pacemaker & why it is used.  
 Q.28 Explain Electroencephalograph test.  
 Q.29 Write a short note on Glucometer.  
 Q.30 Write down the block diagram of Bio-Telemetry system.  
 Q.31 Write a short note on Ventilator.  
 Q.32 Give the brief idea of all elements of Intensive care unit.  
 Q.33 Explain CAT scanners.  
 Q.34 Describe all specification of medical instrumentation system.  
 Q.35 Explain physiological system of the human body.

#### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain all application of Embedded system in Bio-Medical instrumentation.  
 Q.37 Explain the Electro Cardiograph test & draw the PQRS wave also.  
 Q.38 Attempt any two of the following :  
 i) Spiro meter  
 ii) NIBP  
 iii) Computer application in bio-medical system.

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### 6th Sem / Branch : Instrumentation & Control / EI Subject:- Biomedical Instrumentation

Time : 3Hrs.

M.M. : 100

#### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 The De-oxygenated blood flows in:-  
 a) Veins b) Artries  
 c) Both d) None
- Q.2 Smallest bone of Human body:-  
 a) Tibia b) Femur  
 c) Stapes d) Spine
- Q.3 Basic building block of Human body:-  
 a) Tissue b) Cell  
 c) Blood d) All of these
- Q.4 Lower chamber of Heart is called:-  
 a) Atrium b) Ventricle  
 c) Both d) None
- Q.5 Full form of CAT :-  
 a) Computerized Application Telemetry  
 b) Common Application Tomography  
 c) Computerized Axial Tomography  
 d) Common Axial Tomography

- Q.6 Filter are used to :-
- Eliminate unwanted freq
  - Eliminate noise
  - Provide Low SNR
  - All of these
- Q.7 Signal to noise ratio should be :-
- Low
  - High
  - Both
  - None
- Q.8 A transducer convert:-
- One form of energy into another
  - Electrical to Mechanical
  - Electrical to Non-Elctrical
  - Mechanical To Electrical
- Q.9 Accuracy of biomedical inst. related to :-
- Closeness to true value
  - Sharpness of inst
  - Repeatability
  - All of these
- Q.10 Full form of ICU
- Intensive Care Unit
  - Initial Care Unit
  - Initial Center Unit
  - Intensive Center Unit

## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Normal Heart rate of a Human body.
- Q.12 What is the PH value of Blood
- Q.13 Explain contact impedance.
- Q.14 What is Bio-telemetry.
- Q.15 Expand EMG .
- Q.16 Draw PQRS waveform.
- Q.17 Define Tissue
- Q.18 Write the name of all value of human heart.
- Q.19 What is an op-Amp.
- Q.20 What is electrode.

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Explain In-vivo & In-vitro measurement.
- Q.22 Explain cardiovascular system of Human body.
- Q.23 Explain Respiratory system of Human body.
- Q.24 Write a note on Electrode tissue interface.
- Q.25 What is electrode & Describe five required characteristics of a electrode.
- Q.26 Describe all types of electrode in Bio-medical system