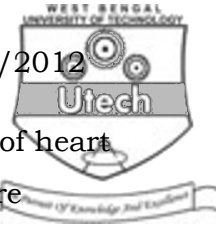


Invigilator's Signature :



- v) Phonocardiogram is a graphic recording of heart
- a) sounds
 - b) pressure
 - c) blood flow
 - d) all of these.
- vi) Biopotential signal generated from heart muscles along three-dimensional axis of the body is known as
- a) VCG
 - b) EEG
 - c) ECG
 - d) EMG.
- vii) Skin impedance is denoted by a parallel combination of
- a) capacitor and resistor
 - b) capacitor and inductor
 - c) resistor and inductor
 - d) none of these.
- viii) Human body temperature ranges from
- a) 85° F to 95° F
 - b) 50° F to 100° F
 - c) 40° F to 60° F
 - d) 70° F to 120° F.
- ix) The frequency band of alpha wave in an EEG pattern is in the range
- a) from 3½ Hz to about 8 Hz
 - b) from about 8 Hz to about 13 Hz
 - c) above 13 Hz
 - d) below 3½ Hz.
- x) Systolic blood pressure in the normal adult is in the range of
- a) 50 mm Hg to 100 mm Hg
 - b) 95 mm Hg to 140 mm Hg
 - c) 60 mm Hg to 90 mm Hg
 - d) 100 mm Hg to 150 mm Hg.



8. a) Define half cell potential. Describe the feature that give rise to half cell potential.
b) What do you mean by 'reference electrode' ? Name three basic types of electrodes for measurement of bio-electric potentials.
c) Write about regulation and standard of medical devices.

5 + 6 + 4
9. a) How can blood oxygen be monitored using fibre-optic catheter ?
b) Draw the normal ECG waveform. Explain the significance of alphabetic designations (*P*, *Q*, *R*, *S*, *T*, *U*).
c) Explain different types of ECG lead configuration with diagram.

5 + 5 + 5
10. a) Discuss about the electrical hazards of medical instruments.
b) What is the difference between electrical macroshock and microshock ?
c) What is a 'pacemaker' ? Write short notes on pacemaker.

5 + 5 + 5
11. a) What is MRI ? Explain the terms 'precessional frequency', 'T1 recovery', 'T2 decay' and 'FID'. Briefly explain how discrimination can be done among biological tissues.
b) What is ultrasonic imaging ? Explain the working of an ultrasonic imaging system.
c) What do you mean by A-mode and B-mode scanning ?

(2 + 3 + 3) + (1 + 3) + 3

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