

Program: BE Biomedical Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester VI

Course Code: BMC601 and Course Name: Biomedical Instrumentation-II

Time: 1 hour

Max. Marks: 50

Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	What is typical amplitude of action potential for a nerve cell
Option A:	20 mV
Option B:	40 mV
Option C:	-70mV
Option D:	-200 mV
Q2.	Frequency range of Electromyography is
Option A:	0.05 to 120 Hz
Option B:	0.1 to 100 Hz
Option C:	5 to 2000 Hz
Option D:	dc to 20 Hz
Q3.	A membrane potential is the difference in electrical charge between
Option A:	potassium and sodium ions
Option B:	the inside and outside of the cell
Option C:	phosphoric acid and glycolipid layers
Option D:	resting and action potentials
Q4.	Ventricular muscle depolarization is indicated by
Option A:	PR interval
Option B:	P wave
Option C:	U wave
Option D:	The QRS complex
Q5.	The material used in limb surface electrode is _____
Option A:	German silver
Option B:	Copper
Option C:	Gold
Option D:	Platinum
Q6.	Which of the following is considered to be the secondary pacemaker of the heart?
Option A:	sino-atrial node
Option B:	atrio-ventricular node
Option C:	purkinje fibres

Option D:	bundle of his
Q7.	The frequency band of Beta (b) wave is
Option A:	4–8 Hz
Option B:	8–13 Hz
Option C:	13–22 Hz
Option D:	22–30 Hz
Q8.	_____ is a bipolar lead configuration
Option A:	Lead-1
Option B:	aVR
Option C:	V1, V2, V3
Option D:	aVF
Q9.	The second heart sound corresponds to
Option A:	Opening of the AV valves
Option B:	Closing of AV valves
Option C:	Opening of Pulmonary and Aortic valves
Option D:	Closing of Pulmonary and Aortic valves
Q10.	Study of electrical behaviour and recording of brain cells is called as
Option A:	EMG
Option B:	Phonocardiograph
Option C:	ECG
Option D:	EEG
Q11.	The process of breathing redistributes an infant's weight is used in
Option A:	apnea detector
Option B:	heart rate meter
Option C:	respiration rate meter
Option D:	ECG recording
Q12.	If a person got electric shock without passing the current through the heart, it is called as
Option A:	microshock
Option B:	macroshock
Option C:	let go current
Option D:	threshold of perception
Q13.	The maximum pressure reached during cardiac ejection is called
Option A:	systolic blood pressure
Option B:	diastolic blood pressure
Option C:	mean blood pressure
Option D:	average blood pressure
Q14.	Change in thoracic impedance with respiration is used in measurement of

	respiration rate measurement in
Option A:	displacement method
Option B:	thermistor method
Option C:	carbon di-oxide method
Option D:	impedance pneumography
Q15.	The transducer normally used for temperature measurement in a patient monitoring system is a
Option A:	thermocouple
Option B:	bi-metallic plates
Option C:	thermistor
Option D:	mercury
Q16.	Increased heart rate is called as
Option A:	tachycardia
Option B:	bradycardia
Option C:	premature contraction
Option D:	Eucardia
Q17.	A typical POC Blood Glucometer gives reading in
Option A:	litres
Option B:	mg/dl
Option C:	g/l
Option D:	bpm
Q18.	Decreased heart rate is called as
Option A:	tachycardia
Option B:	bradycardia
Option C:	premature contraction
Option D:	Eucardia
Q19.	To recover patient from ventricular fibrillation which medical equipment is required
Option A:	Cardiac Pacemaker
Option B:	ECG Machine
Option C:	Ventilator
Option D:	Defibrillator
Q20.	Uterine contractions can be measured using
Option A:	Incubators
Option B:	Tocodynamometers
Option C:	Cardioscope
Option D:	arrhythmia monitors
Q21.	Which of this is not a function of a modern-day baby incubator
Option A:	Regulating Temperature

Option B:	Monitoring oxygen saturation
Option C:	Protection from infection
Option D:	Giving defibrillation shocks
Q22.	What is unit to represent heart rate
Option A:	Beats per minute
Option B:	Breaths per minute
Option C:	mmHg
Option D:	%
Q23.	Identify the statement which is not relevant to Telemedicine system
Option A:	Helps to manage patient information
Option B:	Transmission of Medical Data
Option C:	Provides clinical decision on its own if doctor is not available
Option D:	Appointment scheduling with expert doctor
Q24.	Which of these is not a provision offered by Telephone Telemetry
Option A:	Sending High Resolution Radiology Images
Option B:	Sending physiological signals through telephone lines
Option C:	Patient can communicate with doctor
Option D:	Collection of data from several locations
Q25.	In a multichannel telemetry system, how many sub modulators are required at transmitting end
Option A:	Single sub modulator is required
Option B:	Sub modulator is not required
Option C:	Sub modulators same as that of the number of physiological signals to be transmitted
Option D:	At least two sub modulators per physiological signal

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	B
Q2.	C
Q3.	B
Q4	D
Q5	A
Q6	B
Q7	C
Q8.	A
Q9.	D
Q10.	D
Q11.	A
Q12.	B
Q13.	A
Q14.	D
Q15.	A
Q16.	A

Q17.	B
Q18.	B
Q19.	D
Q20.	B
Q21.	D
Q22.	A
Q23.	C
Q24.	A
Q25.	C