

Program: BE Biomedical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: BMC601 and Course Name: Biomedical Monitoring Equipment

Time: 1 hour

Max. Marks: 50

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

Q1.	Which wave is used to calculate the heart rate
Option A:	P WAVE
Option B:	Q WAVE
Option C:	R WAVE
Option D:	T WAVE
Q2.	The sphygmomanometer technique is a/an
Option A:	Oscillatory method
Option B:	Auscultatory method
Option C:	Rheographic method
Option D:	Photometric method
Q3.	Rheographic method is a/an _____ blood pressure monitoring method
Option A:	direct
Option B:	Indirect
Option C:	Invasive
Option D:	Non-electrical method
Q4.	Which one of the following is not an arrhythmia
Option A:	Atrial fibrillation
Option B:	Ventricular fibrillation
Option C:	Tachycardia
Option D:	Myocardial Infarction
Q5.	Which of the following is not a vital sign
Option A:	Body temperature
Option B:	Pulse rate
Option C:	Respiration rate
Option D:	RBC count
Q6.	In a portable lung function test, what does FEV1 indicates
Option A:	Fastest rate at which one can blow out air out of lungs
Option B:	Amount of air one can blow out in 1 seconds
Option C:	Total inspired air volume

Option D:	Respirate Rate
Q7.	One of the biggest requirements of POC Device is
Option A:	It should be portable and handheld
Option B:	Can be operated through main power source
Option C:	Cost can be high
Option D:	Service person should be available to calibrate it
Q8.	Unit for representing Oxygen Saturation
Option A:	beats per minute
Option B:	breaths per minute
Option C:	mmHg
Option D:	%
Q9.	Ventricular muscle depolarization is indicated by
Option A:	PR interval
Option B:	P wave
Option C:	U wave
Option D:	The QRS complex
Q10.	The material used in limb surface electrode is _____
Option A:	German silver
Option B:	Copper
Option C:	Gold
Option D:	Platinum
Q11.	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
Q12.	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
Q13.	_____ is a bipolar lead configuration
Option A:	Lead-1
Option B:	aVR
Option C:	V1, V2, V3
Option D:	aVF
Q14.	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
Q15.	Study of electrical behaviour and recording of brain cells is called as
Option A:	EMG
Option B:	Phonocardiograph
Option C:	ECG
Option D:	EEG
Q16.	Nerve impulses are propagated along the acoustic nerve fibers to the brain with a speed of
Option A:	50 m/s
Option B:	100 m/s
Option C:	150 m/s
Option D:	200 m/s
Q17.	The human ear responds to the vibrations ranging from
Option A:	10 to 10,000 Hz
Option B:	20 to 20,000 Hz
Option C:	30 to 30,000 Hz
Option D:	40 to 40,000 Hz
Q18.	Uterine contractions can be measured using
Option A:	Incubators
Option B:	Tocodynamometers
Option C:	Cardioscope
Option D:	arrhythmia monitors
Q19.	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
Q20.	Unit for representing heart rate is given as
Option A:	Beats per minute
Option B:	Breaths per minute
Option C:	mmHg
Option D:	%
Q21.	Which method is generally preferred in Indicator Dilution Method
Option A:	Introducing Indicator at a Constant Rate
Option B:	Introducing Indicator as a Bolus
Option C:	Introducing Radioactive Indicator

Option D:	Introducing Ionizing Indicator
Q22.	For an electromagnetic blood flow meter, the induced voltage is given as $e=CHVd$. What does V represents
Option A:	Blood Volume
Option B:	Blood Flow Velocity
Option C:	Blood Viscosity
Option D:	Blood Temperature
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.	C
Q2.	B
Q3.	B
Q4	D
Q5	D
Q6	B
Q7	A
Q8.	D
Q9.	D
Q10.	A
Q11.	B
Q12.	C
Q13.	A
Q14.	D
Q15.	D
Q16.	C
Q17.	B

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