

Program: Biomedical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester V

Course Code: BMC501 and Course Name: Diagnostic and Therapeutic Instruments

Time: 1 hour

Max. Marks: 50

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

Q1.	In Auto analyser dialyser section does the function of
Option A:	protein removal
Option B:	mixing reagent
Option C:	amplification of the signal
Option D:	maintaining temperature of the sample
Q2.	The process by which component of the mixture are separated is called as -----.
Option A:	Colorimetry
Option B:	ELISA
Option C:	Chromatography
Option D:	Electrophoresis
Q3.	HIV test is carried out by
Option A:	Chromatography Technique
Option B:	ELISA Technique
Option C:	Electrophoresis Technique
Option D:	Colorimetric Technique
Q4.	In the equation, $A = \epsilon bc$, " c " represents
Option A:	absorbance
Option B:	molar concentration
Option C:	path length
Option D:	molar absorptivity
Q5.	In colorimeter sensor(transducer) used is
Option A:	Photo cell
Option B:	Strain gauge
Option C:	Thermistor
Option D:	Load cell
Q6.	In capillary electrophoresis, capillary acts as a _____
Option A:	Detection Cell
Option B:	Sensor
Option C:	Funnel
Option D:	Capillary
Q7.	Coulter blood cell counter uses power supply having
Option A:	Constant current
Option B:	Constant voltage

Option C:	Constant impedance
Option D:	Constant Power
Q8.	Which of the following is sensitive to temperature
Option A:	pCO ₂
Option B:	pH
Option C:	pO ₂
Option D:	Bicarbonates
Q9.	For the measurement of base excess level in the blood ----- instrument is used
Option A:	Blood cell counter
Option B:	Blood Gas analyzer
Option C:	Colorimeter
Option D:	Auto analyzer
Q10.	Which of the following quantity is not analysed in Blood Gas analyser
Option A:	pO ₂
Option B:	pCo ₂
Option C:	pH
Option D:	Blood Glucose
Q11.	A pump applies a known pressure to a reservoir of the drug in
Option A:	rotary peristaltic pumps
Option B:	Syringe pumps
Option C:	implantable infusion systems
Option D:	closed loop-controlled infusion systems
Q12.	Volume of fresh air entering the alveoli with each breath is known as
Option A:	Tidal Volume
Option B:	Minute Volume
Option C:	Lung Volume
Option D:	Alveolar Ventilation
Q13.	Natural inspiration is a result of
Option A:	negative pressure in the pleural cavity generated by the movement of diaphragm.
Option B:	positive pressure in the pleural cavity generated by the movement of diaphragm.
Option C:	constant pressure in the pleural cavity.
Option D:	immobile diaphragm
Q14.	Change in volume resulting from unit change in pressure is
Option A:	static compliance
Option B:	compliance
Option C:	elastance
Option D:	transpulmonary pressure
Q15.	Instrument used to measure the instantaneous rate of volume flow of respired gases is a
Option A:	spirometer
Option B:	ventilator
Option C:	pneumotachometer
Option D:	stimulator
Q16.	The volume of gas remaining in the lungs after a forced expiration is
Option A:	residual volume

Option B:	dead space
Option C:	total lung capacity
Option D:	vital capacity
Q17.	Compliance measured at point of zero airflow by interruption or breath hold technique is known as
Option A:	Chest Wall Compliance
Option B:	Lung Compliance
Option C:	Elastance
Option D:	Static Compliance
Q18.	The greatest volume of gas that can be inspired by voluntary effort after maximum expiration, irrespective of time is
Option A:	vital capacity
Option B:	inspiratory capacity
Option C:	functional residual capacity
Option D:	tidal volume
Q19.	Nitrogen washout technique is used for indirect measurement of
Option A:	residual volume
Option B:	tidal volume
Option C:	minute volume
Option D:	dead space
Q20.	Blood leak detector in an AKD is used to detect blood leaks
Option A:	Before the process
Option B:	During the process
Option C:	After the process
Option D:	It is not used
Q21.	The dialysate does not consists of
Option A:	Sodium
Option B:	Potassium
Option C:	Calcium
Option D:	Proteins
Q22.	Which one of the following is incorrect with respect to Chronic Kidney Disease
Option A:	Is Irreversible
Option B:	It is Reversible
Option C:	Does not need dialysis
Option D:	Is not a life long condition
Q23.	Heparin is injected during which phase of dialysis
Option A:	Before the process
Option B:	In between the process
Option C:	After the process
Option D:	It is not injected at all
Q24.	Heater and Temperature controller circuit in dialysis machine is required
Option A:	To maintain blood temperature constant
Option B:	To maintain dialysate temperature constant
Option C:	To increase the dialysate temperature equal to blood temperature and maintain it
Option D:	To decrease the blood temperature equal to dialysate temperature and maintain it

Q25.	Which of the following kidney disease is irreversible?
Option A:	Acute kidney disease
Option B:	Chronic kidney disease
Option C:	Nephritis
Option D:	Polynephritis

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	C
Q3.	B
Q4	B
Q5	A
Q6	A
Q7	A
Q8.	B
Q9.	B
Q10.	D
Q11.	C
Q12.	D
Q13.	A
Q14.	B
Q15.	C
Q16.	A
Q17.	D
Q18.	A

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