

## **BRAINWARE UNIVERSITY**

## **Term End Examination 2021 - 22**

## Programme – Bachelor of Business Administration in Hospital Management Course Name – Biomedical Equipment Management Course Code - BBAHMC602

(Semester VI)

Time allotted: 1 Hrs.15 Min. Full Marks: 60

[The figure in the margin indicates full marks.]

## Group-A

(Multiple Choice Type Question)  $1 \times 60 = 60$ Choose the correct alternative from the following: (1) The frequency range of ECG is a) a) 0.05-150 HZ b) b) 500-1500 Hz c) c) 5-500 kHz d) d) 0.5-150 MHz (2) In which section studies are performed on various body tissues and fluids to determi ne the presence of pathological micro-organisms? a) a) Chemistry b) b) Haemotology c) c) Microbiology d) d) Blood Bank (3) Q1. The following are the major functional physiological systems of the body excep a) A. Cardiovascular system b) B. Respiratory system c) C. Electrocardiogram system d) D. Nervous system (4) Electroencephalogram is obtained from bioelectrical signals from the? a) A. Brain b) B. Heart c) C. Muscles d) D. Retina (5) The following are resistive passive transducers, except? b) B. Potentiometer a) A. Strain gauge c) C. Linear variable differential transformer d) D. Photodiode (LVDT)

b) B. The area of the two parallel plates

d) D. Mass of the two parallel plates

(6) The capacitance of a passive capacitance transducer depends on the following factor

(7) The biopotentials generated by the muscles of the heart with time is called?

s, except?

a) A. Distance between the two parallel plates

c) C. Relative dielectric constant

a) A. Electroretinogram	b) B. Electroencephalogram	
c) C. Electrocardiogram	d) D. Electrooculogram	
(8) Electroencephalogram (EEG) is used in the diagnosis of the:		
a) A. Heart	b) B. Tumour	
c) C. Neuromuscular diseases	d) D. Brain	
(9) All the following are methods of blood pressure measurement, except?		
a) A. Sphygmomanometer	b) B. Percutaneous method	
c) C. Hagen-poiseuille analysis	d) D. Catheterization	
(10) What is Tidal volume with regard to lung capacities?		
a) A. It is the extra volume that can be inspire d.	b) B. It is the maximum volume of the gas tha t can be expelled from the lungs by forcefu l expiration after maximum inspiration.	
c) C. It is the volume of gas inspired or expire d during each respiration cycle.	d) D. It is the volume of air remaining in the l ungs at the end of expiratory level.	
(11) What biological measurement is done by the Spirometer?		
a) A. Blood pressure measurement	b) B. Blood Flow measurement	
c) C. Respiratory volume measurements	d) D. Blood sugar measurement	
(12) What is the function of a Nebulizer as a respiratory therapy?		
<ul> <li>a) A. It is a device used to administer medicat ion in the form of mist inhaled into the lun gs and used for treatment of asthma, and ot her pulmonary disorders.</li> </ul>	b)  B. It is a device used to remove liquid or g ases by suction from the body.	
c) C. It is equipment used to increase humidit y of the inspired air.	d) D. None of the above.	
(13) Interruption or interference with normal physic or structures is called	ological and developmental processes	
a) a) Functional Limitation	b) b) Pathophysiology	
c) c) Societal Limitation	d) d) Modality-Specific	
(14) CT stands for		
a) a) computed tomography	b) b) computer tomography	
c) c) communication tomography	d) d) none of these	
(15) The volume of blood within the dialyzer is kno	own as	
a) a) secondary volume	b) b) quarterly volume	
c) c) priming volume	d) d) residual volume	
(16) The ideal membrane should possess	to water.	
a) a) low permeability to water	b) b) high permeability to water	
c) c) medium permeability to water	d) d) high permeability to waste	
(17) The blood pressure within the glumerular capil	laries is of mercury.	
a) a) 80 mm	b) b) 70-80 mm	
c) c) 90 mm	d) d) 70-90 mm	
(18) Which cams are used in the earlier modules of sample aspiration and wash cycles?	auto-analyzers to initiate and control	
a) a) Electrical cams	b) b) Digital cams	
c) c) Analog cams	d) d) Mechanical cams	

(19) The function of the is r and gases through the analytical	s to continuously and simultaneously push fluids, ail chain.	
a) a) sampling unit	b) b) proportioning pump	
c) c) manifold	d) d) dialyzer	
(20) Which section deals with the anamine the quantity of various important	lysis of blood, urine, CSF and other fluids to deter ortant substance?	
a) a)Bio Chemistry	b) b) Haemotology	
c) c) Microbiology	d) d) Blood Bank	
(21) Which of the following is the mo	st common substance for analysis from the body?	
a) a) CSF	b) b) Urine	
c) c) Blood	d) d) Glucose	
(22) accounts for 40% of the blo	ood volume.	
a) a) Blood cells	b) b) Water	
c) c) Carbon Dioxide	d) d) Blood plasma	
(23) Welsh cup electrodes have		
a) a) low contact impedance	b) b) negligible contact impedance	
c) c) high contact impedance	d) d) zero contact impedance	
(24) Fluorescence is the property when X-ray falls on a material it emits		
a) a) Infrared Waves	b) b) Visible Light	
c) c) Gamma rays	d) d) UV light	
(25) Which of the following is consider	ered to be the primary pacemaker of the heart?	
a) a) sino-atrial node	b) b) atrio-ventricular node	
c) c) purkinje fibres	d) d) bundle of his	
(26) Which of the following is a wirel	ess ECG acquiring system?	
a) a) pregelled disposable electrode	es b) b) limb electrodes	
c) c) pasteless electrodes	d) d) smart pad	
(27) Before placing the electrodes the		
a) a) wet	b) b) dry	
c) c) hairy	d) d) oily	
(28) Law obeyed by Pulse Oximeter is	, , , , , , , , , , , , , , , , , , ,	
a) a) Lambert-Bouguer law	b) b) Beer 's law	
c) Beer-Lambert law	d) d) Lamber-Bouguer, Beer's and Beer-Lam bert Law	
(29) How many LED's are used in Pu		
a) a) 1	b) b) 2	
c) c) 3	d) d) 4	
(30) Oxygen saturation is estimated by	, ,	
a) a) ratio (R) of pulse-added red al at 660 nm to the pulse-added inf bances at 940 nm	bsorbance b) b) ratio (R) of pulse-added red absorbance	
c) c) ratio (R) of pulse-added red at 330 nm to the pulse-added inf bances at 940 nm	, , , , <del>,</del>	
(31) How much blood is present in an	average adult?	

a) a) 10-12 L	b) b) 2-3 L
c) c) 5-6 L	d) d) 20-25 L
(32) Diameter of erythrocytes is in the range of _	
a) a) nano meters	b) b) micro meters
c) c) pico meters	d) d) femto meters
(33) Which of the following blood constituent is	in the form of a bi-concave disc?
a) a) lymphocytes	b) b) leucocutes
c) c) neutrophils	d) d) erythrocytes
(34) Which of the following is the most reliable:	method for detecting FHR pattern?
a) a) Abdominal foetal electrocardiogram	b) b) Foetal phonocardiogram
c) c) Ultrasound technique	d) d) Foetal ECG with scalp electrode
(35) Which of the following instrument is used f over the apex of heart?	or recording the chest-wall movements
a) Apexcardiograph	b) Ballistocardiograph
c) Electro-oculograph	d) Electro-retinograp
(36) The frequency range of ECG is	<u></u>
a) 0.05-150 HZ	b) 500-1500 Hz
c) 5-500 kHz	d) 30-150 MH
(37) Skin Reflectance oximeter depends on mon- wavelengths	itoring backscattered lights in how many
a) 1	b) 2
c) 3	d) 4
(38) In the sampling control, one complete rotati	on of the plate thus presents
a) 35 samples	b) 40 samples
c) 20 samples	d) 30 samples
(39) Source of Bioelectric potential is in nature	
a) electronic	b) . electric
c) ionic	d) mechanical
(40) Phonocardiography is listening to	
a) arm muscle sound	b) lungs sound
c) . heart sound	d) respiratory tract sound
(41) Where are the electrodes placed for recording	ng foetal electrocardiogram?
a) heart	b) abdomen
c) brain	d) veins
(42) What is the magnitude of ECG for a typical	adult in the standard lead connection?
a) 1 mV	b) 2 mV
c) 3 mV	d) 4 mV
(43) Which section deals with the analysis of blomine the quantity of various important substantials.	
a) Chemistry	b) Haemotology
c) Microbiology	d) Blood Bank
(44) In a pump ,the fluid is drawn into	pump and is then forced outlet

a) a) Positive displacement	b) b) Jet
c) c) Airlift	d) d) Propeller Pumps
(45) In pumps, the energy of the fluid	l is converted into velocity energy.
a) a) Positive Displacement	b) b) Jet
c) c) Airlift	d) d) Propeller Pumps
(46) In a single circulation the Heart Pumps?	
a) a) Oxygenated blood	b) b) Deoxygenated blood
c) c) Mixed blood Only	d) d) blood nutrients
(47) In which one of the following year, magnetic	c resonance imaging was patented?
a) a) 1874	b) b) 1784
c) c) 1972	d) d) 1987
(48) Magnetic resonance imaging was invented b	y
a) a) Sir Stephen Poplawski	b) b) Sir Raymond Damadian
c) c) Sir Martin Cooper	d) d) Sir Tim Berners Lee
(49) Magnetic resonance imaging was invented b	y
a) a) Sir Stephen Poplawski	b) b) Sir Raymond Damadian
c) c) Sir Martin Cooper	d) d) Sir Tim Berners Lee
(50) Ultrasound 'is a reflection of	
a) (a) soft tissues only	b) (b) hard tissues only
c) (c) both soft and hard tissues	d) (d) hard muscles only
(51) What is the wavelength of ultrasound in wat	er?
a) a) 1.5mm	b) b) 3mm
c) c) 4.5mm	d) d) 6.0 mm
(52) The sound used in sonography is	
a) a) Infrasonic	b) b) Audible
c) c) Ultrasonic	d) d) None of these
(53) The effect of spinal Anesthesia on bowels in	cludes
a) a) Increased Peristalsis	b) b) Contraction
c) c) Dilatation	d) d) Atony
(54) Which radical is generated in water by X-ray	y?
a) a) H2°	b) b) O2°
c) c) OH°	d) d) O°
(55) The respiratory parameter of the arterial block	od gas set is the:
a) a) PO2	b) b) O2 SAT
c) c) PCO2	d) d) HCO3-
(56) Where are test packs placed to present the gr	reatest challenge to the steam sterilizer?
a) a) Bottom rack back	b) b)Top Rack Back
c) c) Centre	d) d) Over the drain
(57) For sterilization to occur, steam must:	
a) a) Make direct contact with all surface	b) b)Be superheated
c) c)Be flushed into each package	d) d)Trap air inside the package
(58) Which of the following instrument is used for over the apex of heart?	or recording the chest-wall movements

- a) a) Apex cardiograph
- c) c) Electro-oculography
- (59) In the plasma membrane, carbohydrates
  - a) (a) always faces outwards, towards extracel lular space
  - c) (c) always faces to the lumen of cells

- b) b) Ballistocardiograph
- d) d) Electro-retinography
- b) (b) directed to all sides in the membrane randomly
- d) (d) always faces inward to the nonpolar por tion of the membrane
- (60) Each minute that defrillation is delayed reduces the chance of survival of a sudden c ardiac arrest victim by ab out-
  - a) a) 3 percent
  - c) c) 10 Percent

- b) b) 50 percent
- d) d) 40 percent