



## **BRAINWARE UNIVERSITY**

## Term End Examination 2023-2024 Programme – B.Sc.(OTT)-2021 Course Name – Advance Anesthetic Techniques Course Code - BOTTS503 ( Semester V )

Full Marks: 60

Time: 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

## Group-A

(Multiple Choice Type Question)

1 x 15=15

- 1. Choose the correct alternative from the following:
  - (i) What is the primary function of the atrioventricular (AV) valves in the heart?
    - a) To pump blood into the pulmonary artery
- b) To prevent backflow of blood into the ventricles
- c) To receive oxygenated blood from the lungs
- d) To facilitate the release of carbon dioxide
- (ii) What is the primary cause of the "lub" sound (S1) heard in heart sounds?
  - a) Closure of semilunar valves

b) Ventricular relaxation

c) Ventricular ejection

- d) Closure of AV valves
- (iii) What is the primary determinant of cardiac output?
  - a) Stroke Volume

b) Heart Rate

c) Preload

- d) Afterload
- (iv) What is the primary goal of managing atrial fibrillation?
  - a) Reduce heart rate

b) Restore sinus rhythm

c) Increase atrial contractions

- d) Lower blood pressure
- (v) Which population may require higher levels of humidification due to prolonged mechanical ventilation?
  - a) Neonates

b) Adults

c) Critically ill patients

- d) Home care patients
- (vi) What is the typical heart rate during ventricular tachycardia?
  - a) 40-60 bpm

b) 60-100 bpm

c) 100-150 bpm

- d) Above 150 bpm
- (vii) What is the maximum flow rate for high-flow nasal cannula therapy?
  - a) 1-6 L/min

b) 4-12 L/min

c) 6-15 L/min

d) Up to 60 L/min

(viii)	When is oxygen therapy indicated in patients wit	h chronic respiratory conditions?	
	a) Only during acute exacerbations	<ul> <li>b) To alleviate chronic hypoxemia and im exercise tolerance</li> </ul>	prove
	c) Never, as these patients don\'t require oxygen	d) Only during hospitalization	
(ix)	What is the first step in managing electrolyte imb		
	a) Performing surgery	b) Obtaining laboratory tests	
	c) Administering diuretics	d) Adjusting medication regimens	
(x)	Which lifestyle factor is NOT a risk factor for hype		
	a) Smoking	b) Alcohol consumption	
()	c) Physical activity	d) Vegetable consumption	
(XI)	What is the range of oxygen concentrations that		
	a) 24% to 44%	b) 35% to 60%	
,	c) 60% to 75%	d) Close to 100%	
(XII)	What does NPO status stand for, and how can it a		
	a) No Patient Observations; it increases electrolyte levels	<ul> <li>b) Nil per os; it can lead to fluid and elec imbalances</li> </ul>	
	c) Non-Pharmacological Operation; it enhances electrolyte absorption	<ul> <li>d) Nutrient-Protein Overload; it decrease electrolyte levels</li> </ul>	es
(xiii)	Which factor during anesthesia can impact electrand chloride levels?	olyte concentrations, particularly sodium	
	a) Surgical stress	b) Administration of isotonic fluids	
	c) Diuretic use	d) Prolonged fasting	
(xiv)	What action should the nurse perform to assess ventilated patient?	the adequacy of oxygenation in a	
	a) Interpret arterial blood gas (ABG) results	b) Administer supplemental oxygen	
	c) Elevate the head of the bed	d) Monitor heart rate and blood pressure	
(xv)	Which mode of mechanical ventilation is commo ventilation?	nly used during weaning from mechanical	
	a) Pressure Control	b) Volume Control	
	c) Pressure Support	d) SIMV	
	Grou	р-В	
	(Short Answer Ty	ype Questions)	3 x 5=15
2. De	escribe ventricular systole phase of cardiac cycle.		(3)
	. Describe the key features of Assist-Control (AC) mode in mechanical ventilation.		
4. Ex	plain the primary goal of oxygen therapy.	120.5	(3) (3)
	ow does high-flow nasal oxygen therapy generate pically used?	a positive airway pressure, and when is it	(3)
	nalyze the potential impact of prolonged fasting (Nesthesia.	IPO status) on electrolyte balance during	(3)
	OI.	Romanes	
Ar	nalyze the potential impact of prolonged fasting or	n acid-base balance during anesthesia.	(3)
	Grou	p-C	
	(Long Answer Ty	토 10 1 20전략 Marie 10 10 10 10 10 10 10 10 10 10 10 10 10	5 x 6=3
7. D	escribe different types of bradyarrythmias.		<b>(5</b> )

8.	Analyze the physiological mechanisms involved in gas exchange during Intermittent Positive	(5)		
	Pressure Ventilation (IPPV) and explain how they contribute to maintaining adequate	(-,		
	oxygenation and carbon dioxide elimination.			
۵	Elaborate on the importance of the			
Э.	Elaborate on the importance of close monitoring of gas exchange, respiratory mechanics, and	(5)		
	nemodynamic parameters during IPPV.			
10.	. Analyze the principles of acid-base balance and explain how alterations in hydrogen ion (H+)	(5)		
	and bicarbonate (HCO3-) concentrations affect the body's pH.	(5)		
11	Describe different ECG loads and the city of			
42	. Describe different ECG leads and their placement.	(5)		
12.	. Explain different elements of cardiac contractility.	(5)		
OR				
	Analyze the causes and management of hypertension.	(5)		
	Bentent of Hypertension.	(2)		
	*****************			