



BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Sc.(CCT)-2021/B.Sc.(CCT)-2022/B.Sc.(CCT)-2023

Course Name – Basic Anaesthesia

Course Code - BCCTC401

(Semester IV)

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) Tell the right consequence of increase in PEEP during ventilation on the patient.
 - a) Increase BP
 - b) Decrease BP
 - c) Flatten alveoli
 - d) Decrease FiO₂
- (ii) Identify the "supraglottic airway device" from the following:
 - a) LMA
 - b) Endotracheal tube
 - c) Venturi mask
 - d) Nasal cannula
- (iii) Identify which of the following represent a "weaning" mode of mechanical ventilation.
 - a) Volume control
 - b) Pressure control
 - c) Pressure support
 - d) NAVA
- (iv) Select Which of the following represent a true statement about endotracheal intubation.
 - a) ET tube is a false airway
 - b) ET tube is a supraglottic airway
 - c) Neonates are intubated with cuffless tube
 - d) None of these
- (v) Select the option that justify the above statement of Succinylcholine can cause malignant hyperthermia.
 - a) Malignant hyperthermia is a low metabolic state
 - b) Ryanodine receptors are antagonised by succinylcholine leading to lessening of excitation-contraction potential of muscles.
 - c) Both 1 & 2
 - d) None of these
- (vi) Select the following medications is classified as a selective α_2 -adrenergic agonist commonly used for premedication to provide sedation and analgesia.
 - a) Ondansetron
 - b) Dexmedetomidine
 - c) Ketamine
 - d) Propofol
- (vii) Discuss which local anesthetic has the highest lipid solubility.
 - a) Bupivacaine
 - b) Lidocaine
 - c) Procaine
 - d) Mepivacaine

- (viii) Select which of the following is a characteristic side effect of bupivacaine toxicity.
- | | |
|----------------|---------------------------|
| a) Seizures | b) Respiratory depression |
| c) Tachycardia | d) Hypertension |
- (ix) Select which monitoring parameter is crucial for assessing the adequacy of ventilation during mechanical ventilation under general anesthesia.
- | | |
|----------------------|------------------------------|
| a) Oxygen saturation | b) Respiratory rate |
| c) ETCO ₂ | d) Arterial blood gas levels |
- (x) Solve the following scenario: A patient requires emergency airway management, and direct laryngoscopy is not feasible. Which airway device should be considered?
- | | |
|----------------------------|----------------------------------|
| a) Endotracheal tube (ETT) | b) Laryngeal mask airway (LMA) |
| c) Nasopharyngeal airway | d) Esophageal-tracheal combitube |
- (xi) Choose the function of a nasopharyngeal airway.
- | | |
|--|---|
| a) It provides a patent airway in unconscious patients | b) It prevents the tongue from obstructing the airway |
| c) It bypasses the upper airway obstruction | d) It facilitates fiberoptic intubation |
- (xii) Solve the following scenario: A patient with a suspected cervical spine injury requires airway management. Which airway device should be avoided.
- | | |
|----------------------------------|--------------------------------|
| a) Nasopharyngeal airway | b) Laryngeal mask airway (LMA) |
| c) Esophageal-tracheal combitube | d) Orotracheal tube |
- (xiii) Choose the Preoperative fasting guidelines typically recommend avoiding solid foods for at least how many hours before elective surgery.
- | | |
|------------|------------|
| a) 2 hours | b) 4 hours |
| c) 6 hours | d) 8 hours |
- (xiv) Choose the safety feature that prevents delivery of hypoxic gas mixtures.
- | | |
|------------------|------------------|
| a) One-way valve | b) Hypoxic guard |
| c) Vaporizer | d) Exhaust valve |
- (xv) Identify the correct safety feature of the vaporizer.
- | | |
|-------------------------------------|---------------------|
| a) Adjustable concentration control | b) Pin index system |
| c) Hypoxic guard | d) One-way valve |

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Write the common tools and equipment used for endotracheal intubation. (3)
3. Discuss the potential side effects or adverse reactions associated with bupivacaine administration. (3)
4. Write the way of confirmation of endotracheal tube placement. (3)
5. Discuss the main types of breathing circuits, and how do they differ in design and functionality. (3)
6. Justify "Magill circuit is used spontaneous breathing". (3)

OR

Justify the statement "Ketamine is contraindicated in hypertensive patients" (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Consider the common causes of regurgitation, including gastroesophageal reflux disease (GERD). (5)
8. Explain the common causes of regurgitation, including structural abnormalities, functional disorders, and neurological conditions. Provide examples and discuss the pathophysiology behind each cause. (5)
9. Focus on the systemic side effects that may occur following the administration of local anesthetics, such as central nervous system (CNS) toxicity, cardiovascular effects, and (5)

allergic reactions.

10. Classify induction agents based on their chemical structure and pharmacological properties, such as barbiturates, benzodiazepines, propofol, and etomidate. (5)
11. Discuss in detail the importance of preanesthetic checkup. (5)
12. Create an in-depth overview of the components and functionalities of an anesthesia machine, highlighting the importance of each component. (5)

OR

- Infer the different types of alarms on an anesthesia machine and their significance. (5)

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