



13710



## BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – B.Sc.(OTT)-2022/B.Sc.(OTT)-2023/B.Sc.(OTT)-2024

Course Name – Principles of Anesthesia

Course Code - BOTT303

( Semester III )

Library  
Brainware University  
398, Ramkrishnapur Road, Barasat  
Kolkata, West Bengal-700125

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) Select the correct full form of "PEEP":
- a) Positive End Expiratory Pressure.      b) Peak exit end pressure  
c) Peak entry end pressure.                d) Peak effusion end pressure.
- (ii) Define the purpose of a pressure relief valve in a medical gas system.
- a) To control gas flow rate                      b) To prevent overpressurization  
c) To filter the gas                                d) To monitor gas purity
- (iii) Define the primary hazard associated with medical air in the healthcare setting.
- a) Explosion risk                                 b) Asphyxiation  
c) Respiratory irritation                        d) Toxicity
- (iv) Select the pin index number of oxygen.
- a) 2,5     b) 1,5  
c) 4,5     d) 5,5
- (v) Select the gas that is primarily used for induction and maintenance of general anesthesia.
- a) Oxygen                                         b) Nitrous oxide  
c) Carbon dioxide                                d) Helium
- (vi) Select the safety mechanism to prevent the simultaneous administration of nitrous oxide and oxygen at high flows.
- a) Check valves                                 b) Vaporizer  
c) Pressure relief valve                        d) Carbon dioxide absorber
- (vii) Select the purpose of the end-tidal carbon dioxide (EtCO<sub>2</sub>) monitor during anesthesia.
- a) Measures the patient's oxygen saturation      b) Monitors the patient's heart rate  
c) Measures the carbon dioxide concentration in exhaled gases.      d) Controls the flow of nitrous oxide

- (viii) Examine the condition where may cause inaccurate pulse oximetry readings, leading to falsely high oxygen saturation values.
- a) Anemia  
b) Hypothermia  
c) Hyperventilation  
d) Hyperglycemia
- (ix) Choose the treatment if a patient's SpO<sub>2</sub> reading drops significantly during anesthesia.
- a) Administer more anesthesia agents  
b) Increase the oxygen flow rate  
c) Decrease the ventilation rate  
d) Ignore the reading, as it's likely a technical error
- (x) Choose the primary method for measuring non-invasive blood pressure.
- a) Palpation  
b) Auscultation  
c) Arterial catheterization  
d) Pulse oximetry
- (xi) Choose the normal range for central venous pressure in a healthy adult.
- a) 0-5 mmHg  
b) 10-15 mmHg  
c) 20-25 mmHg  
d) 30-35 mmHg
- (xii) Explain the type of flow meter is designed to deliver a precise flow rate regardless of variations in inlet pressure.
- a) Rotameter  
b) Venturi flow meter  
c) Orifice flow meter  
d) Variable area flow meter
- (xiii) Solve the recommended way to assess the fit of a face mask on a patient.
- a) Assessing oxygen saturation levels  
b) Auscultating lung sounds  
c) Observing chest rise and fall  
d) Checking for a pulse
- (xiv) Solve the potential complication of using a rigid laryngoscope blade.
- a) Esophageal perforation  
b) Dental trauma  
c) Hypoxia  
d) Bronchospasm
- (xv) Write the type of laryngoscope blade is often preferred, When performing a rapid sequence induction (RSI).
- a) Straight blade  
b) Miller blade  
c) Macintosh blade  
d) Bullard laryngoscope

### Group-B

(Short Answer Type Questions)

3 x 5=15

2. Enumerate the safety precautions for handling medical gas cylinders. (3)
3. Give examples of two modes of ventilation. (3)
4. Explain why Post spinal headache can occur after spinal anaesthesia? (3)
5. Explain how is blood pressure typically monitored during anesthesia. (3)
6. Write about 12 lead ECG and their placement. (3)

OR

Justify the statement Magill circuit is good for patients with spontaneous breathing. (3)

### Group-C

(Long Answer Type Questions)

5 x 6=30

7. Enumerate the role of a scavenging system in an anesthesia machine. (5)
8. Describe the role of oxygen saturation and methods of saturation monitoring in anaesthesia. (5)
9. Explain anesthesia machine and its primary functions. (5)
10. Defend the statement that Semiclosed anaesthesia circuits have certain inherent advantages which make them extremely useful for anaesthesia induction. (5)
11. Discover the methods used to monitor neuromuscular function during anesthesia, and why is it important. (5)
12. Explain the statement that SIMV is a good weaning mode of mechanical ventilation. (5)

OR

Classify breathing circuits. Mention the characteristics of an ideal breathing circuit.

(5)

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