



BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Sc.(PA)-2021/B.Sc.(PA)-2022

Course Name – Principles of Basic Intensive Care

Course Code - BPAS503

(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) Identify the primary contraindication for chest physiotherapy.
 - a) Reduced lung compliance
 - b) Increased oxygen saturation
 - c) Recent abdominal surgery
 - d) Decreased heart rate
- (ii) Identify the component connects the mask to the bag in a bag valve mask assembly.
 - a) Connector tube
 - b) Exhalation valve
 - c) One-way valve
 - d) Reservoir bag
- (iii) Select the potential complication of using a bag-mask device for ventilation.
 - a) Bradypnea
 - b) Hyperventilation
 - c) Gastric insufflation
 - d) Decreased tidal volume
- (iv) Select the potential complication of tracheostomy tube insertion.
 - a) Hyperinflation of the lungs
 - b) Bradypnea
 - c) Aspiration pneumonia
 - d) Epistaxis
- (v) Identify the technique for using a bag-valve-mask (BVM) device.
 - a) Squeeze the bag continuously to force air into the stomach
 - b) Use the BVM for chest compressions during CPR
 - c) Place the mask over the mouth only and provide ventilation
 - d) Deliver quick, firm breaths while maintaining a good seal over the nose and mouth
- (vi) Define tracheostomy.
 - a) A procedure to remove the gallbladder
 - b) A surgical procedure to remove the tonsils
 - c) A procedure to create an opening in the trachea
 - d) A procedure to remove the appendix
- (vii) Locate the purpose of titrating oxygen therapy for patients with chronic 2 retention.

- a) To prevent oxygen toxicity
b) To avoid respiratory acidosis
c) To minimize oxygen flow
d) To maintain hypoxemia
- (viii) Select which electrolyte is crucial to monitor during TPN administration.
a) Potassium
b) Iron
c) Vitamin C
d) Zinc
- (ix) Identify the reason for auscultating bowel sounds after Ryle's tube insertion.
a) To monitor respiratory rate
b) To measure the tube's length
c) To evaluate gastric pH
d) To confirm tube placement
- (x) Cirrhosis is a common cause of hepatic failure Identify what is cirrhosis.
a) An autoimmune disease affecting the liver
b) A progressive scarring of the liver tissue
c) A bacterial infection of the liver
d) A type of liver cancer
- (xi) Identify a common complication of prolonged mechanical ventilation in neonates.
a) Hyperthermia
b) Bronchopulmonary dysplasia (BPD)
c) Metabolic alkalosis
d) Cardiac arrhythmias
- (xii) Identify the term for a ventilation mode where the ventilator delivers a set number of breaths per minute, regardless of the baby's respiratory efforts.
a) Assist-control ventilation
b) Synchronized intermittent mandatory ventilation (SIMV)
c) Continuous positive airway pressure (CPAP)
d) Pressure support ventilation (PSV)
- (xiii) Identify What does PIP stand for in neonatal ventilation.
a) Peak Inspiratory Pressure
b) Positive Inspiratory Pressure
c) Preterm Infant Pressure
d) Pulmonary Improvement Parameter
- (xiv) Choose the write answer - A 35-year-old female with severe diarrhea presents with weakness and cramps. ABG reveals pH 7.32, PaCO₂ 28 mm Hg, and HCO₃⁻ 14 mEq/L. Write primary acid-base disturbance.
a) Respiratory acidosis
b) Respiratory alkalosis
c) Metabolic acidosis
d) Metabolic alkalosis
- (xv) Choose the write answer - A 50-year-old male with chronic liver disease presents with confusion and jaundice. ABG shows pH 7.48, PaCO₂ 40 mm Hg, and HCO₃⁻ 30 mEq/L. Write primary acid-base disturbance.
a) Respiratory acidosis
b) Respiratory alkalosis
c) Metabolic acidosis
d) Metabolic alkalosis

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Select the potential complications and risks associated with suctioning. (3)
3. Enumerate the fundamental components of a mechanical ventilator and their roles in delivering breaths to the patient. (3)
4. Infer the potential risks of oxygen toxicity. (3)
5. Write the ECG criteria for diagnosing ventricular fibrillation and its clinical implications. (3)
6. Write in brief about renal failure. (3)

OR

Infer the primary functions of the kidneys in the human body. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Evaluate about the key parameters and clinical signs that healthcare providers should monitor (5) when a patient is receiving oxygen therapy.
8. Write about the monitoring and management of patients with acute kidney injury (AKI) in (5) critical care.
9. Infer the principles of management for acute kidney injury, including supportive measures and (5) strategies to address underlying causes.
10. List in details the different techniques for tube placement verification, including auscultation, (5) capnography, and chest X-rays.
11. Discuss the advantages and disadvantages of endotracheal intubation compared to other (5) airway management techniques.
12. Explain the potential complications that may arise after successful intubation, such as (5) ventilator-associated pneumonia (VAP) and ventilator-induced lung injury (VILI).

OR

Focus on the use of rapid sequence intubation (RSI) in patients with traumatic brain injury (5) (TBI) and the impact on intracranial pressure.

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