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Term End Examination 2025-2026**Programme – B.Sc.(CCT)-2021/B.Sc.(CCT)-2022/B.Sc.(CCT)-2023****Course Name – Respiratory Support for Critical Care Patients****Course Code - BCCTC504****(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) Choose the following should you NOT do when attempting to clear a foreign object from an unconscious person's mouth.
- a) Use your fingers to sweep out the object b) Perform abdominal thrusts
c) Perform rescue breaths d) Continue attempts to clear the airway until professional help arrives
- (ii) Choose the purpose of a humidifier in an oxygen delivery system.
- a) To increase the oxygen concentration b) To cool the oxygen
c) To reduce the risk of infection d) To add moisture to the oxygen to prevent drying of the airways
- (iii) Choose the primary purpose of BiPAP therapy.
- a) To treat high blood pressure b) To improve lung function
c) To provide artificial respiration d) To assist with breathing in patients with respiratory disorders
- (iv) Identify the primary goal of oxygen administration in healthcare settings.
- a) To treat infections b) To relieve pain
c) To provide supplemental oxygen to patients d) To improve appetite
- (v) Choose in which situation would you use a bag-mask device during respiratory therapy.
- a) Routine oxygen administration b) Non-invasive positive pressure ventilation (NIPPV)
c) Endotracheal intubation d) Endotracheal intubation
- (vi) Explain If a patient is on mechanical ventilation exhibits decreased breath sounds on one side and increased chest movement on the opposite side, what would you suspect.
- a) Pneumothorax b) Atelectasis
c) Pulmonary embolism d) Ventilator malfunction
- (vii) Identify the primary objective of non-invasive ventilation (NIV).

- a) To increase BP non invasively
b) To provide mechanical ventilation to comatose patients
c) To provide mechanical ventilation to conscious patients
d) Only washout the CO₂
- (viii) Choose the following is a common mode of invasive ventilation that allows spontaneous breaths between ventilator-delivered breaths.
a) Pressure Control Ventilation (PCV)
b) SIMV
c) Assist-Control Ventilation (ACV)
d) Volume Control Ventilation (VCV)
- (ix) Identify the primary mode of ventilation used for patients who require full ventilatory support.
a) Pressure Support Ventilation (PSV)
b) Continuous Positive Airway Pressure (CPAP)
c) Volume-Control Ventilation (ACV)
d) Nasal Cannula Oxygen Therapy
- (x) Select what should be done if a high-pressure alarm on the ventilator is triggered
a) Increase the FiO₂ setting
b) Ignore it; it's a common false alarm
c) Look for any airway obstruction
d) Turn off the ventilator immediately
- (xi) Select the term "high-pressure alarm" on a ventilator indicate:
a) The patient's blood pressure is too high.
b) There is a blockage or resistance in the airway or breathing circuit.
c) The room temperature is too high.
d) The patient is in deep sleep.
- (xii) Write What does the "Low-battery" alarm on a ventilator indicate.
a) The ventilator is running low on oxygen.
b) The battery in the ventilator is running low and needs to be replaced or recharged.
c) The patient's battery-operated devices need charging.
d) The patient's oxygen saturation is critically low.
- (xiii) Identify the correct option in mechanically ventilated ARDS patients.
a) Start with Tidal Volume = 10-12* Actual Body Weight
b) Start with Tidal Volume = 10-12* Ideal Body Weight
c) Start with Tidal Volume = 4* Ideal Body Weight
d) Start with Tidal Volume = 4* Actual Body Weight
- (xiv) Explain When should you deliver a shock using an automated external defibrillator (AED) during a cardiac arrest situation.
a) Immediately upon arrival
b) After performing 2 minutes of CPR
c) Only if the victim is a child
d) After checking for a carotid pulse
- (xv) Choose the recommended depth of chest compressions for adult CPR.
a) At least 1 inch (2.5 cm)
b) At least 2 inches (5 cm)
c) At least 0.5 inches (1.25 cm)
d) As deep as possible

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Define maintaining an open airway essential in cardiopulmonary resuscitation (CPR)? (3)
3. Describe cricothyrotomy, and when is it typically performed? (3)
4. Explain about tracheostomy. (3)
5. Write some common indications for fiberoptic bronchoscopy? (3)
6. Describe the common delivery methods for oxygen therapy. (3)

OR

- Summarize the primary purpose of monitoring respiratory support in patients receiving mechanical ventilation? (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Write the five common troubleshooting techniques in respiratory therapy, and how can they be applied to resolve issues effectively. (5)
8. Illustrate the principles of invasive mechanical ventilation, highlighting the key components, indications, and potential complications. (5)
9. Differentiate between CPR (Cardiopulmonary Resuscitation) for adults, children, and infants. (5)
10. Evaluate the information can be derived from an inspiratory and expiratory flow-volume loop. (5)
11. Define how to maintain an open airway crucial in the management of patients with respiratory distress or cardiopulmonary arrest? (5)
12. Illustrate the two common routes for tracheal intubation, and where is the tube inserted for each. (5)

OR

Illustrate why it is important to monitor patients receiving mechanical ventilatory support. (5)

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