BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Sc.(CCT)-2021/B.Sc.(CCT)-2022
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) Name the following is the correct sequence of steps when providing basic life support (BLS) to an unresponsive adult.

a) Airway, Breathing, Circulation
b) Circulation, Breathing, Airway
c) Breathing, Airway, Circulation
d) Circulation, Airway, Breathing

(ii) 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

(iii) Name the primary indication for using the nasal route for tracheal intubation.

a) Improved vocal cord visualization
b) Patient preference
c) Suspected cervical spine injury
d) Difficulty in opening the mouth

(iv) During nasal tracheal intubation, Choose the technique can help minimize the risk of epistaxis (nosebleed)

a) Lubricating the endotracheal tube with lidocaine gel
b) Applying pressure to the nasopharynx
c) Inserting the tube quickly and forcefully
d) Avoiding the use of vasoconstrictor sprays

(v) Identify the primary purpose of monitoring airway pressures during mechanical ventilatory support.

a) To assess the patient's oxygen saturation
b) To evaluate lung compliance
c) To measure the patient's heart rate
d) To check for fluid balance

(vi) Name the condition is characterized by a decreased FEV1/FVC ratio and is commonly diagnosed using spirometry.

a) Hypertension
b) Type 2 diabetes
c) Obstructive lung disease
d) Osteoporosis

(vii) Name the following spirometric measurements assesses the amount of air remaining in the lungs after a maximal exhalation.

a) FEV1
b) FVC
c) Peak flow rate
d) Residual Volume (RV)

(viii) Select the role of a "T-piece trial" in the weaning process.

a) To administer additional sedation
b) To assess the patient's sense of smell
c) To evaluate the patient's tolerance for a high-pressure ventilator
d) To provide minimal ventilatory support during a trial of spontaneous breathing

(ix) Choose the following conditions is characterized by a reduced diffusion capacity on pulmonary function testing.

a) Asthma
b) Chronic obstructive pulmonary disease (COPD)
c) Pulmonary fibrosis
d) Pleural effusion

(x) Select the FEV1 represent in spirometry.

a) The volume of air exhaled in the first second of a forced expiration
b) The total lung capacity
c) The residual volume of air in the lungs after maximal exhalation
d) The inspiratory capacity

(xi) 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

(xii) Select the purpose of the exhalation valve in a Bi-PAP circuit.

a) It controls the flow of oxygen to the patient.
b) It allows the patient to exhale and prevents air from the circuit from entering the patient's lungs during exhalation.
c) It measures the patient's oxygen saturation.
d) It monitors the patient's respiratory rate.

(xiii) Identify In which situation should you consider suctioning a patient's airway.

a) the patient is coughing excessively
b) the patient's oxygen saturation is higher then 95%
c) the patient has clear breath sounds
d) the patient has thick, tenacious secretions that cannot be cleared by coughing

(xiv) Identify When troubleshooting a chest tube system, what should you do if there is no fluctuation in the water seal chamber.

a) Increase the suction pressure
b) Assess for kinks or obstructions in the tubing
c) Clamp the chest tube to assess for air leaks
d) Remove the chest tube and reinsert it

(xv) Identify the following is a potential complication of high-flow oxygen therapy.

a) Hypoxemia
b) Hypercapnia
c) Respiratory alkalosis
d) Atelectasis

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Define the head-tilt-chin-lift maneuver in CPR. (3)
3. Discuss about some indicators that a patient may be ready for ventilator weaning. (3)
4. Explain about invasive ventilation. (3)

5. Explain how cardiopulmonary arrest recognized. (3)
6. Justify the potential complications or risks associated with cricothyrotomy. (3)

OR

Justify when invasive ventilation typically used. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Classify the common causes of low oxygen saturation in a patient undergoing respiratory therapy, and how can they be addressed. (5)
8. Evaluate the information can be derived from an inspiratory and expiratory flow-volume loop. (5)
9. Describe the importance of maintaining an open airway in both basic first aid and advanced medical care. (5)
10. Explain why it is important to confirm the placement of the endotracheal tube after insertion. (5)
11. Illustrate why it is important to monitor patients receiving mechanical ventilatory support. (5)
12. Write the essential lung volumes and flows that are monitored in the ICU, and why are they important in critical care settings. (5)

OR

Justify weaning an important phase of mechanical ventilation management. (5)

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