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BRAINWARE UNIVERSITY

Term End Examination 2024-2025

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

Course Name – Basic Administration and Equipment Maintenance

Course Code - BCCTC603

(Semester VI)

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 non-consumable item commonly used in the ICU.

a) Ventilator tubing	b) Medication vial
c) Patient bedsheet	d) IV catheter
- (ii) Choose the primary purpose of maintaining proper humidification in ventilator circuits.

a) To decrease resistance in the breathing circuit	b) To prevent drying of the airway mucosa
c) To enhance the accuracy of FiO ₂ delivery	d) To minimize the risk of circuit contamination
- (iii) Write the importance to monitor and maintain proper cuff pressure in endotracheal tubes during mechanical ventilation.

a) To prevent patient discomfort and tracheal injury	b) To ensure accurate measurement of tidal volume
c) To optimize gas exchange by minimizing dead space	d) To prevent accidental extubation during patient movement
- (iv) Choose the correct parameter should be closely monitored to prevent ventilator-induced lung injury (VILI).

a) Plateau pressure	b) Positive End Expiratory Pressure
c) Mean airway pressure	d) Exhaled tidal volume
- (v) Select the proper action to be taken in order to prevent ventilator-associated pneumonia (VAP).

a) Frequent suctioning of the ET tube irrespective of any present secretion	b) Elevating the head of the bed
c) Wean off the patient as early as possible based upon the patient's condition	d) Decreasing humidification levels
- (vi) Write a common complication associated with prolonged mechanical ventilation?

a) Hypotension	b) Hypothermia
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- c) Barotrauma
(vii) Select the correct component of the ventilator responsible for delivering the prescribed tidal volume to the patient.
a) Flow sensor
c) Expiratory valve
(viii) Write the proper actions should be taken if the ventilator alarm indicates "Low Exhaled Tidal Volume".
a) Increase inspiratory flow rate
c) Check for endotracheal tube cuff leak
(ix) Write the proper action to be taken if the ventilator alarm indicates "High Respiratory Rate".
a) Increase FiO₂
c) Decrease tidal volume
(x) Choose the probable cause if the defibrillator displays "Defib Pads Expired".
a) The pads are not sticky enough
c) The pads are disconnected
(xi) Write the proper actions should be taken, if the defibrillator consistently delivers low energy shocks during cardioversion attempts.
a) Increase the energy setting on the defibrillator
c) Verify the impedance matching of the electrode pads
(xii) Choose the correct procedure for calibrating invasive blood pressure (IBP) readings on a multipara monitor.
a) Apply pressure to the cuff
c) Adjust the gain setting
(xiii) Select the primary purpose of performing routine checks on multipara monitor batteries.
a) To ensure the display is functioning properly
c) To adjust alarm settings
(xiv) Choose the correct action if the NIBP (Non-Invasive Blood Pressure) cuff on a multipara monitor is consistently overinflating.
a) Replace the cuff with a larger size
c) Apply more gel to the cuff bladder
(xv) Select from the following as a potential cause of inaccurate capnography readings on a multipara monitor.
a) Loose ECG electrodes
c) Partially obstructed endotracheal tube
d) Bradycardia
b) Inspiratory valve
d) Humidification chamber
b) Decrease inspiratory flow rate
d) Increase PEEP level
b) Assess patient-ventilator synchrony
d) Check for patient agitation
b) The pads are no longer conductive
d) The defibrillator needs calibration
b) Check the patient's medication history
d) Switch to manual mode and adjust energy levels manually
b) Ensure zeroing before connecting to the patient
d) Reboot the monitor
b) To maintain the accuracy of physiological measurements
d) To calibrate the blood pressure module
b) Decrease the inflation pressure setting
d) Ignore the issue as it will resolve on its own
b) Faulty SpO₂ probe
d) Overinflated NIBP cuff

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain steps should be taken if a ventilator alarm indicates a high-pressure condition. (3)
3. Write the common signs of a malfunctioning ventilator circuit, and how can it be addressed. (3)
4. Write the essential maintenance steps for a multipara monitor. (3)
5. Explain the importance to maintain an adequate stock of consumables in a hospital setting. (3)
6. Explain the significance of proper skin preparation before attaching electrodes. (3)

OR

Explain the steps should be taken if the ECG machine is producing baseline drift. (3)

Group-C

7. Discuss the ways to prevent clot formation in the sample lines of an ABG machine. (5)
8. Discuss the steps can be taken to troubleshoot a defibrillator that fails to start during an emergency. (5)
9. Write the steps should be followed during preventative maintenance of a BiPAP machine. (5)
10. Explain how can regular inspections help prevent unexpected device downtime briefly. (5)
11. Write the typical causes of occlusions, and how can they be resolved during pump operation. (5)
12. Write the steps should be followed during preventative maintenance of a ventilator. (5)

OR

Illustrate the ways to estimate the physical integrity of a ventilator during visual inspections. (5)

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