SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Third Year (Semester-V)

March 2022 Examination

B.Sc. Respiratory Care Technology (RCT)

Time: 3 Hrs.

[Max. Marks: 100]

Respiratory Care Technology Clinical Q.P Code: J5891

Your answers should be specific to the questions asked. Draw neat labelled diagrams wherever necessary.

Long Essay (no choice)

2×10=20 Marks

- Define Acute Respiratory distress syndrome (ARDS). Write a note on causes, clinical features and management of ARDS (2+2+2+4)
- 2. Explain the characteristics of therapeutic aerosols

Short Essay (Answer any 10)

10×5=50 Marks

- 3. Describe the mechanism of cough
- 4. Write a note on Acute pharyngitis
- 5. Describe the pathophysiology and clinical features of bronchitis
- 6. Write a note on diagnosis and chest X-ray feature of COPD
- 7. Describe in detail about the pathophysiology of ARDS
- 8. Describe in detail about Venturi along with labelled diagram
- 9. Describe the pathophysiology and clinical features of lung abscess
- 10. Describe the goals and complication of oxygen therapy
- 11. Write a note on the key mechanism of aerosol deposition
- 12. Describe the pathophysiology and clinical features of Asthma
- 13. Describe in detail about small volume nebulizer along with labelled diagram
- 14. Write a note on reservoir oxygen therapy devices.

Short answer (Answer any 10)

10×3=30 Marks

- 15. Mention the chest X-ray feature of pulmonary edema
- 16. Describe the complication of aerosol therapy
- 17. Describe the optimal technique of using a Metered dose inhaler
- 18. Write in detail about pathophysiology of COPD
- 19. Write the difference between low and high flow oxygen therapy devices
- 20. Write a note on Nasal cannula
- 21. Describe the clinical signs of hypoxemia
- 22. Describe the uses of humidification therapy
- 23. Write a note on diagnosis of Tuberculosis
- 24. Write a difference between ALI and ARDS
- 25. Write note on pathophysiology of Pulmonary edema
- 26. Mention the difference between Active and Passive humidifiers.



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B.Sc. Respiratory Care Technology (RCT)

Time: 3 Hrs.

[Max. Marks: 100]

Respiratory Care Technology Applied Q.P Code: J5892

Your answers should be specific to the questions asked. Draw neat labelled diagrams wherever necessary.

Long Essay (no choice)

2×10=20 Marks

- 1. Explain in detail about the assessment of oxygenation status
- 2. Write in detail about troubleshooting of ventilator alarms

Short Essay (Answer any 10)

10×5=50 Marks

- 3. Lung compliance
- 4. Ventilation/perfusion mismatch
- Airway pressure release ventilation (APRV)
- 6. Phase variables
- 7. Synchronized intermittent mandatory ventilation (SIMV)
- 8. Sodium abnormalities
- Respiratory Acidosis
- 10. Application of chest inspection, percussion and auscultation
- 11. Permissive hypercapnia
- 12. Three strategies to improve oxygenation status
- 13. Intrapulmonary shunting
- 14. Metabolic alkalosis

Short answer (Answer any 10)

10×3=30 Marks

- 15. List the causes of metabolic acidosis
- 16. Phase variable of assist control (A/C mode)
- 17. List the causes of high-pressure alarms
- 18. Hypokalemia
- 19. Define airway resistance with formula and write the normal value.
- 20. List three differences between main-stream and side-stream capnography
- 21. Phase variable of pressure regulated volume control (PRVC) mode
- 22. List the difference between SIMV and PSV mode.
- 23. Classify oxygenation on basis of pao₂
- 24. Techniques used to confirm endotracheal tube placement
- 25. Phase variable of pressure support ventilation (PSV) mode
- 26. Clinical signs of ventilation failure



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B.Sc. Allied Health Sciences Third Year (Semester-V)

March 2022 Examination

B.Sc. Respiratory Care Technology (RCT)

Time: 3 Hrs.

[Max. Marks: 100]

Respiratory Care Technology Advanced O.P Code: J5893

Your answers should be specific to the questions asked. Draw neat labelled diagrams wherever necessary.

Long Essay (no choice)

2×10=20 Marks

1. 45 year old diabetic patient presents to the casualty in an obtunded state, patient is on 35 % venturi. pH = 7.01, PaCO2 = 80 mmHg, HCO3- = 20 mmol L-1, PaO2- 100mmHg, Na+ = 140 mEq L-1, K+ = 5.5 mEq L-1, Cl- = 97 mEq L-1

2. Describe in detail about surfactant therapy

Short Essay (Answer any 10)

10×5=50 Marks

- 3. Status of ventilation
- 4. Initial ventilator setting in neonatal mechanical ventilation
- 5. Types of surfactants
- 6. Compensation of metabolic disorders
- 7. Initial ventilator settings in high frequency oscillatory ventilation (HFOV)
- 8. Bicarbonate and standard bicarbonate
- 9. Procedure of neonatal endotracheal ventilation
- 10. Indication and contra-indication of mechanical ventilation
- 11. Causes of weaning failure
- 12. Oxygenation criteria of weaning
- 13. Clinical criteria related to failure of spontaneous breathing trial (SBT)
- 14. Hazards and complication of mechanical ventilation

Short answer (Answer any 10)

10×3=30 Marks

- 15. Define weaning success, weaning failure
- 16. Frequency (Respiratory rate)
- 17. List the components of ABG
- 18. Classify neonates based on gestation
- 19. List the condition that hinders successful weaning
- 20. Standard base excess
- 21. List the advantages of arterial blood gas sampling
- 22. Equipment's used in neonatal endotracheal intubation
- 23. Status of oxygenation
- 24. Initial ventilator setting of pressure control (A/C PC) mode
- 25. Labelled diagram of lung volume and capacities
- 26. Pre- analytical error in Arterial blood gas sampling

