



**SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH**

(A DEEMED TO BE UNIVERSITY)

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

March 2023 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**

1. Describe the etiology, pathophysiology, clinical features and diagnosis of asthma. (2+4+2+2)
2. Write in detail about toxic inhalation injury.

**Short Essay (Answer any 10)**

**10×5=50 Marks**

3. Write the definition and causes of ARDS
4. Write a short note on acute rhinitis
5. Describe the etiology and clinical feature of COPD
6. Write a note on high flow oxygen therapy devices
7. Write a note on passive humidification devices
8. Write a short note on epiglottitis
9. Describe about dry powder inhaler
10. Describe the medical management of status asthmaticus
11. Describe the indication and hazards of aerosol therapy
12. Write a note on ultrasonic nebulizer
13. Describe the diagnosis and management of lung abscess
14. Write in detail about non-rebreathing mask with labelled diagram

**Short answer (Answer any 10)**

**10×3=30 Marks**

15. Define ARDS
16. Describe the management of COPD
17. Write a note on Venturi
18. Describe the complication of aerosol therapy
19. List the classification of oxygen therapy with examples
20. Describe the pathophysiology of bronchitis
21. Describe the complication of oxygen therapy
22. Write a note on aerosol particle size
23. List the factors influencing aerosol deposition in the lung
24. Describe the pathophysiology of acute lung injury
25. Write the signs and symptoms of pneumonia
26. Write a note on sedimentation of aerosol

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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 strategies to improve oxygenation.
2. Describe in detail about Capnography.

**Short Essay (Answer any 10)**

**10×5=50 Marks**

3. Compliance.
4. Explain in detail about anatomical dead space .
5. Detail about Depressed ventilatory drive.
6. Control mode ventilations.
7. Strategies to improve oxygenation.
8. Trouble shoot high-pressure alarms.
9. Supported mode.
10. Ventilator circuit and artificial airway care.
11. Fluid management in ICU.
12. What are all the Phase variables.
13. Troubleshoot low pressure alarms.
14. What are all the physiological changes occurs in diffusion defect.

**Short answer (Answer any 10)**

**10×3=30 Marks**

15. Indication of APRV mode.
16. Causes of extracellular deficiency.
17. Compensation and management of Respiratory acidosis.
18. Hyperkalemia.
19. Phase variable of SIMV mode.
20. Normal values of lung compliance and time constant.
21. Clinical signs of oxygenation failure.
22. Classify the oxygenation status based on  $p_{aO_2}$ .
23. Write any three differences between CMV and SIMV mode.
24. Compensatory formulae for metabolic acidosis and metabolic alkalosis.
25. Causes of metabolic acidosis.
26. Management of respiratory acidosis.





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

March 2023 Examination

**B.Sc. Respiratory Care Technology (RCT)**

Time : 3 Hrs.

[Max. Marks : 100]

**Respiratory Care Technology Advanced**

**Q.P Code : J5893**

*Your answers should be specific to the questions asked.*

*Draw neat labelled diagrams wherever necessary.*

**Long Essay**

**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, PaCO<sub>2</sub> = 80 mmHg, HCO<sub>3</sub><sup>-</sup> = 20 mmol L<sup>-1</sup>, PaO<sub>2</sub> = 100mmHg, Na<sup>+</sup> = 140 mEq L<sup>-1</sup>, K<sup>+</sup> = 5.5 mEq L<sup>-1</sup>, Cl<sup>-</sup> = 97 mEq L<sup>-1</sup>

2. Describe in detail about surfactant therapy

**Short Essay**

**10×5=50 Marks**

3. Status of ventilation

4. Initial ventilator setting in neonatal mechanical ventilation

5. Compensation of metabolic disorders

6. Initial ventilator settings in high frequency oscillatory ventilation (HFOV)

7. Bicarbonate and standard bicarbonate

8. Procedure of neonatal endotracheal ventilation

9. Indication and contra-indication of mechanical ventilation

10. Causes of weaning failure

11. Clinical criteria related to failure of spontaneous breathing trial (SBT)

12. Hazards and complication of mechanical ventilation

**Short answer**

**10×3=30 Marks**

13. Define weaning success, weaning failure

14. List the components of ABG

15. List the condition that hinders successful weaning

16. Standard base excess

17. List the advantages of arterial blood gas sampling

18. Equipment's used in neonatal endotracheal intubation

19. Status of oxygenation

20. Initial ventilator setting of pressure control (A/C PC) mode

21. Labelled diagram of lung volume and capacities

22. Pre- analytical error in Arterial blood gas sampling