SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

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

September 2022 Examination

## 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. Write in detail about lung compliance and airway resistance
2. Describe in detail about clinical condition leading to mechanical ventilation

**Short Essay (Answer any 10)** **10×5=50 Marks**

3. Time constant
4. Pressure regulated volume control (PRVC)
5. Explain any five strategies to improve oxygenation
6. Ventilator circuit care
7. Metabolic acidosis
8. Adaptive support ventilation (ASV)
9. Potassium abnormalities
10. Phase variable of A/C and SIMV mode
11. Peep
12. Pressure support ventilation (PSV).
13. Respiratory alkalosis
14. Ventilator/ perfusion mismatch

**Short answer (Answer any 10)** **10×3=30 Marks**

15. Advantages and disadvantages of APRV mode
16. Troubleshoot low pressure alarm
17. Phase variables of CMV mode
18. Causes of extracellular fluid deficiency
19. Causes of respiratory acidosis
20. Application percussion and auscultation during Mechanical ventilation
21. Clinical features of oxygenation failure
22. Difference between side-stream and main-stream capnography
23. Hyperkalemia
24. Hypoventilation
25. Clinical feature of ventilation failure
26. Classify oxygenation status on basis of $PaO_2$

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

**September 2022 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 (no choice)** **2×10=20 Marks**

1. Describe the Goals, Indication and Complication of Mechanical ventilation.
2. A 20-year-old man is brought to the emergency room with a history of consumption of a bottle of pills. On examination his HR- 140 bpm, BP is 130/50 mm Hg and RR is 45 / min. patient was on 40%venturi. ABG showed pH = 7.34, PaCO2 = 15 mmHg, HCO3- = 8 mmol L-1, PaO2- 80mmHg Na+ = 140 mEq L-1, K+ = 3.5 mEq L-1, Cl - = 104 mEq L-1. Interpret the ABG with oxygenation status.

**Short Essay (Answer any 10)** **10×5=50 Marks**

3. Status of oxygenation
4. Anion gap
5. Define weaning success, weaning failure and weaning in progress.
6. High frequency oscillatory ventilation
7. Initial ventilator setting of pressure control (A/C PC) mode
8. Types of surfactants and dosages
9. Mechanism of gas exchange in high frequency ventilation
10. Advantages of arterial blood gas sampling
11. Causes of weaning failure
12. Equipment's used in neonatal endotracheal intubation
13. Base excess and standard base excess
14. Ventilation criteria in weaning

**Short answer (Answer any 10)** **10×3=30 Marks**

15. Partial pressure of oxygen ($PaO_2$)
16. Labelled diagram of lung volume and capacities
17. Classify neonates based on gestation
18. Indication of neonatal mechanical ventilation
19. List the condition that hinders successful weaning
20. Standard bicarbonate
21. Weaning procedure
22. Indications of neonatal mechanical ventilation
23. List the components of ABG
24. Frequency (respiratory rate)
25. Timings of surfactant therapy
26. Oxygenation criteria in weaning