Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Respiratory Care Technology Examination – 30-May-2024

Time: Three Hours | Max. Marks: 100 Marks

Clinical care respiratory care technology Paper - I (RS2)

Q.P. CODE: 2929

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Explain pleural effusion.
2. Explain the goals of oxygen therapy.
   Or
   Explain the ARDS (Acute respiratory distress syndrome)
3. Diagnosis of tuberculosis.
   Or
   Explain in details of pulmonary tuberculosis.

SHORT ESSAYS (Answer any Ten) 10 x 5 = 50 Marks

4. What are oxygen delivery devices?
5. What do you mean by atypical pneumonia?
6. What is pulmonary edema?
7. What are the goals of oxygen therapy?
8. How do you assess aerosol therapy?
9. What are the possibilities of inadequate humidification?
10. What are the hazards of oxygen therapy?
11. What are the hazards of aerosol therapy?
12. What do you mean by acute sinusitis?
13. What are the types of occupational lung diseases?
14. What is mean by toxic inhalation?
15. What are the clinical signs of hypoxemia?

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

16. **What are the types of humidifier.**
17. What is mean by particle decomposition?
18. What is bronchitis?
19. What is laryngo-trachitis?
20. What is mean by dyspnoea?
21. What is cyanosis?
22. How do you treat acute rhinitis?
23. Bronchodilators.
24. What is hemoptysis?
25. Indication for nebulizer therapy.
26. What are the symptoms of bronchial asthma?
27. What are the symptoms of pulmonary edema?
    Or
    X-ray findings in pneumothorax.

Rajiv Gandhi University of Health Sciences, Karnataka

Year B. Sc. Respiratory Care Technology Degree Examination – 03-Jun-2024

Time: Three Hours | Max. Marks:100 Marks

Applied Respiratory Care Technology -II (RS2)

Q.P. CODE: 2930

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

LONG ESSAYS (Answer any two) — 2 x 10 = 20 Marks

1. Write about tracheostomy in detail and post tracheostomy respiratory care.
2. Discuss about basic modes and operational modes of mechanical ventilation.
3. Discuss arterial blood gas analysis and management of respiratory acidosis.

SHORT ESSAYS (Answer any ten) — 10 x 5 = 50 Marks

4. Troubleshooting of ventilator alarms and events
5. NIV
6. Bronchodilators
7. Pulmonary embolism
8. Metered dose inhalers
9. Obstructive sleep apnea
10. PEEP
11. Causes of hypoxia
12. Bronchoscopy, its indications and scope sterilization
13. ETCO2 monitoring
14. Postural drainage
15. Oxygen delivery methods

SHORT ANSWERS (Answer any ten) — 10 x 3 = 30 Marks

16. Endotracheal suctioning
17. Calculation of lung compliance
18. Deep breathing exercises
19. Home mechanical ventilation
20. Speaking valve
21. Weaning failure
22. Flutter device
23. Propofol
24. Surfactant
25. Pulse oximetry
26. Abnormal breath sounds
27. I-gel airway

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Respiratory Care Technology Degree Examination - 05-Jun-2024

Time: Three Hours | Max. Marks: 100 Marks

Advanced Respiratory Care Technology - III (RS2)

Q.P. CODE: 2931

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Ventilatory management of a patient with - a) Asthma b) COPD
2. Describe weaning procedure from mechanical ventilation, causes of weaning failure and predictors of weaning failure
3. Indications, modes, patient selection and complications of NIV

SHORT ESSAYS (Answer any Ten) 10 x 5 = 50 Marks

4. Complications of mechanical ventilation
5. Hyperbaric oxygen therapy
6. Ventilator alarm settings
7. Surfactant replacement therapy
8. Liquid ventilation
9. Describe rationale and patient as well as equipment selection for home mechanical ventilation
10. Sleep apnea-diagnosis and treatment
11. Sedation in ICU
12. ABG analysis
13. Prevention and treatment of ventilator – acquired pneumonia
14. Pulmonary oedema
15. Ventilatory management of patient with neuromuscular disease

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

16. High plateau pressure
17. Enumerate modes of neonatal mechanical ventilation
18. Auto-PEEP
19. CPAP
20. Measures to prevent oxygen toxicity
21. Treatment of metabolic acidosis
22. Causes of Hyperkalemia
23. Ventilator settings for patient with chest trauma
24. Sterilization of respiratory circuit components
25. Nebulization in patient on mechanical ventilation
26. Treatment of hyponatremia
27. Caisson’s disease

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Respiratory Technology Degree Examination – 30-May-2024

Time: Three Hours | Max. Marks: 100 Marks

Respiratory Technology – Clinical- Paper-I (RS-3)

Q.P. CODE: 3361

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Sepsis – Definition, stages, resuscitation and management guidelines.
2. Pulmonary rehabilitation in Obstructive and restrictive diseases.
   OR
   Cardiopulmonary exercise tests and mention indications and contraindications.
   Or
   Explain in details about extracorporeal life support.

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Mechanism of exercise intolerance in chronic respiratory disease.
   Or
   Explain in detail about $ETCO_2$ in various conditions and analysis of waveforms.
4. ICU management in Ischemic and Hemorrhagic stroke.
5. Indication, contraindication and complication of oral and nasal intubation.
   OR
   Leptospirosis.
6. Arterial line insertion – Indication, sites, complication.
7. Evidence based guidelines on pulmonary rehabilitation.
8. VAP bundle.
9. Abnormal findings on CXR.
10. VV-ECMO
    OR
    Acute and chronic respiratory acidosis.
    Or
    Write a note on CVP
11. Brain death and apnea test.
12. Analgesics and sedatives – Classification and Indications.

SHORT ANSWER 10 x 3 = 30 Marks

13. Indications for ICD.
14. Abnormal breath sounds.
15. Management of OP poisoning.
16. Ramsay's sedation scale.
17. Hypokalemia.
18. Apnea – Hypoapnea index.
19. Types of shock.
20. Oxygen cascade.
21. Atelectasis.
22. Indications for NIV.

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Rajiv Gandhi University of Health Sciences, Karnataka

Third Year B.Sc. Respiratory Care Technology Degree Examination – 03-Jun-2024

Time: Three Hours | Max. Marks: 100 Marks

Respiratory Technology – Applied – Paper-II (RS-3)

Q.P. CODE: 3362

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Write in detail on ventilatory graphics for all functional modes according to pressure vs volume with phase variables

2. Write a note extra-pulmonary effects of mechanical ventilation
   OR
   Write a note on mechanism, pathophysiology, management of cardiogenic shock

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Write a note on acute coronary syndrome
4. Write in detail life threatening arrhythmias
5. Write in detail on brain protective ventilation strategy
   OR
   Write in detail on Extubation failure and re-intubation criteria
6. Write a note pathogenesis of ventilator associated pneumonia
7. Write in detail on recruitment maneuvers in ARDS
8. Write a note on capnograph and their abnormalities
9. Discuss in detail monitoring the electrical activity of the diaphragm
10. Write a note pulse oximetry
    OR
    Write a note on initial ventilatory settings for closed head injury patients
11. Write a note on triggering mechanism in mechanical ventilation
12. Write a note on endotracheal intubation

SHORT ANSWER 10 x 3 = 30 Marks

13. Contraindications and physiological effects of PEEP
14. Plateau pressure
15. Air trapping
16. Weaning criteria
17. Compartment syndrome
    Or
    Endotracheal cuff management.
18. Wallace rule of nine
19. Left axis deviation
20. T-piece system
21. Harmful effects of oxygen therapy
22. Lung ultrasound – normal and abnormal signs

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Respiratory Technology Degree Examination – 05-Jun-2024

Time: Three Hours | Max. Marks: 100 Marks

Respiratory Technology – Advanced – Paper-III (RS-3)

Q.P. CODE: 3363

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Surfactant replacement therapy, types of surfactants, indications and techniques.
2. Explain neonatal resuscitation with algorithm.
   OR
   Congenital heart disease – Cyanotic and acyanotic and its management.

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Oxygen and Heliox therapy, indications, delivery devices and hazards.
4. Meconium aspiration syndrome.
5. Croup.
   OR
   Inhaled nitric oxide therapy in paediatrics.
6. Stages of fetal lung development.
7. High Flow Nasal Cannula.
8. Mechanism of heat loss.
9. Indications, contraindications and complications of NIV in neonates.
10. Calorimetry.
    OR
    Aerosol delivery devices.
11. Extracorporeal membrane oxygenation.
12. Management of shock in pediatrics.

SHORT ANSWER 10 x 3 = 30 Marks

13. Epiglottitis.
14. Complications of surfactant.
15. Pathophysiology of persistent pulmonary hypertension (PPHN) of neonates.
16. LMA – Indication and complications.
17. Atrial septal defect.
18. APGAR scoring.
19. Hypothermia.
20. Pulse oximetry.
21. Contraindications to pediatric flexible bronchoscopy.
22. Anatomy of pleura.

Rajiv Gandhi University of Health Sciences, Karnataka

Third Year B.Sc. Respiratory Care Technology Degree Examination – 22-Nov-2024

Time: Three Hours Max. Marks: 100

Respiratory Technology – Clinical- Paper-I (RS-3)

Q.P. CODE: 3361

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Explain in details about extracorporeal life support
2. Define pulmonary rehabilitation and describe various exercises in rehabilitation of patients with respiratory diseases
   OR
   Describe the sleep stages and explain briefly about polysomnography

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Post cardiac arrest care in ICU
4. Sepsis bundle
5. Stroke identification and emergency management
   OR
   Management of tension pneumothorax and cardiac tamponade
6. Tests used to evaluate brain death
7. Types of shock and management of hypovolemic shock
8. Gastrointestinal bleed
9. Explain various scenarios of trouble shooting in mechanical ventilation
10. Management in Organo Phosphate Poisoning
    OR
    Anion - gap
11. Haemodynamic monitoring in ICU
12. Steps wise approach for ABG interpretation

SHORT ANSWER 10 x 3 = 30 Marks

13. Importance of ETCO2 monitoring
14. Arterial line-sites and indications
15. Acute and chronic respiratory acidosis
16. Indication of NIV
17. Importance of Intracranial pressure and cerebral perfusion in head injury patients
18. Management of distributive shock in ICU
19. Hyperkalemia
20. Ramsay's sedation scale
21. Complication of central line insertion
22. Amniotic fluid embolism

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Respiratory Care Technology Examination – 22-Nov-2024

Time: Three Hours Max. Marks: 100 Marks

Clinical care respiratory care technology Paper - I (RS2)

Q.P. CODE: 2929

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Explain small volume nebulizer therapy.
2. Explain lower respiratory tract infection.
3. What are oxygen delivery devices? Explain its types.

SHORT ESSAYS (Answer any Ten) 10 x 5 = 50 Marks

4. What do you mean by transcutaneous oxygen monitors?
5. What are the types of resuscitator bags?
6. Explain about artificial airways.
7. What are the factors influencing aerosol deposition in the lungs?
8. What are the causes of hypoxemia?
9. What is Capnography?
10. What are the types of nebulizers?
11. What are the devices for aerosol delivery?
12. Significance of Capnography.
13. What is mean by acute Pharyngitis?
14. Explain acute sinusitis.
15. What is bronchitis?

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

16. Indications of manual resuscitators.
17. Assessment of aerosol therapy.
18. What are the types of humidifiers?
19. What are the uses of humidification?
20. What are the goals of aerosol therapy?
21. What are the clinical signs of hypoxemia?
22. What is mean by epiglotitis?
23. What is mean by hospital acquired pneumonia?
24. What is mean by laryngo-tracheitis?
25. Acute rhinitis.
26. Hazards of aerosol therapy.
27. What is pulmonary edema?

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B. Sc. Respiratory Care Technology Degree Examination – 25-Nov-2024

Time: Three Hours **Max. Marks:100 Marks**

Applied Respiratory Care Technology -II (RS2)

Q.P. CODE: 2930

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

LONG ESSAYS (Answer any two) 2 x 10 = 20 Marks

1. Define NIV and explain its functional modes, indications, advantages and contraindications.
2. Discuss aerosol therapy and highlight various aerosol delivery equipments.
3. ABG-various parameters indicating respiratory alkalosis and acidosis

SHORT ESSAYS (Answer any ten) 10 x 5 = 50 Marks

4. Chest auscultation
5. Checklist for a bronchoscopy procedure
6. Percussion-indication and contraindication
7. Inverse ratio ventilation
8. Role of respiratory therapist in tobacco cessation
9. SIMV
10. Humidity therapy
11. Common artificial airways
12. Assessment of ventilator failure
13. Preparation of a patient for PFT
14. Alarm settings in a ventilator
15. ECMO and its complications

SHORT ANSWERS (Answer any ten) 10 x 3 = 30 Marks

16. Calculation of lung compliance
17. Sleep studies-indication
18. Vital capacity in obstructive and restrictive lung disease
19. Flutter devices
20. NRBM
21. N-acetyl cystiene in respiratory therapy
22. Barotrauma
23. Complications of mechanical ventilation
24. CPAP
25. Airway suctioning
26. ETCO2
27. Abnormal breath sounds

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Respiratory Care Technology Degree Examination - 27-Nov-2024

Time: Three Hours Max. Marks: 100 Marks

Advanced Respiratory Care Technology - III (RS2)

Q.P. CODE: 2931

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. What are the types of Rhythms in cardiac arrest? Discuss approach to cardiac arrest.
2. What are the indications of mechanical ventilation? What are the various modes of mechanical ventilation? What are the complications of mechanical ventilation?
3. What is NIV? What are the conditions in which NIV can be used? What are factors predicting failure of NIV?

SHORT ESSAYS (Answer any Ten) 10 x 5 = 50 Marks

4. High frequency jet ventilation
5. Types of nebulizers
6. Oxygen toxicity
7. Lung volumes
8. High altitude pulmonary edema
9. Surfactant
10. Drowning
11. Obstructive sleep apnea
12. PEEP
13. Inverse ratio ventilation
14. Metabolic acidosis
15. Procedure of collecting blood for ABG

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

16. Bronchospasm
17. Inhational injury
18. Cough variant asthma
19. Therapeutic hypothermia
20. Barotrauma
21. Calculation of body surface area
22. AVAPS
23. Spirometry
24. Bronchodilators
25. Hyperbaric oxygen therapy
26. Ventilatory management in head injury patient
27. Hypoxia

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Respiratory Technology Degree Examination – 25-Nov-2024

Time: Three Hours | Max. Marks: 100 Marks

Respiratory Technology – Applied – Paper-II (RS-3)

Q.P. CODE: 3362

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Discuss in detail about extra – pulmonary effects of mechanical ventilation
2. Explain in detail about Ventilator – Associated event
   OR
   Discuss in details about home – mechanical ventilation

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Air Trapping (Auto – PEEP) and its management
4. Write a note on Positive End-Expiratory Pressure (PEEP)
5. Explain the Ventilator strategies for COPD patients
   OR
   Explain the patient – ventilator asynchrony in ventilator graphics
6. Explain the P-V loop and its importance
7. Airway pressure release ventilation
8. Electrolytic disturbances in critically ill patients
9. Trouble shooting in mechanical ventilation
10. Pressure control ventilation
    OR
    Write a note on metabolic acidosis and alkalosis
11. Ventilator management in neuromuscular disorders
12. Adaptive support ventilation

SHORT ANSWER 10 x 3 = 30 Marks

13. RSBI (Rapid Shallow breathing index)
14. Complications of artificial airway
15. Complications of bronchoscopy
16. Airway resistance monitoring
17. Mention the causes of patient in sudden distress during mechanical ventilation
18. Extubation failure
19. Respiratory failure types
20. Components of inflation pressure
21. Endotracheal cuff management
22. Discontinuation of noninvasive ventilation

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Respiratory Technology Degree Examination – 27-Nov-2024

Time: Three Hours | Max. Marks: 100

RESPIRATORY CARE TECHNOLOGY – Advanced – Paper-III (RS-3)

Q.P. CODE: 3363

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Describe airway management in newborn
2. Discuss non-invasive mechanical ventilation of newborn. Describe indications, contraindications and complications of NIV
   OR
   Diagnosis and management of congenital diaphragmatic hernia

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Apnea of prematurity
4. Capnography
5. Blood gas sampling
   OR
   Retinopathy of prematurity
6. Pediatric asthma
7. Oxygen delivery devices
8. List modes of neonatal mechanical ventilation. Describe any two
9. Prevention of hypothermia in newborn
10. Mode of administration of surfactant therapy
    OR
    NIV therapy in neonatal disorders
11. Indications and contraindications of invasive ventilation in newborn
12. Transition from intrauterine to extra uterine life

SHORT ANSWER 10 x 3 = 30 Marks

13. Chest compression in newborn
14. Temperature measurement in newborn
15. Enlist cyanotic congenital heart disease
16. Indications of Capnography
17. LISA
18. Hazards of HFNC
19. List interfaces for NIV
20. Ballard scaring
21. Principle and devices for pulse oximetry
22. Treatment of Meconium Aspiration Syndrome

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