

Question Paper

Exam Date & Time: 25-Jun-2024 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION - JUNE 2024
SUBJECT: RES6012 - PULMONARY REHABILITATION
(SPECIALIZATION: ADULT RESPIRATORY CARE/NEONATAL & PAEDIATRIC RESPIRATORY CARE)
(2021 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- | | | |
|-----|---|------|
| 1) | Write a short note on rationale for exercise training, mechanism of exercise intolerance and exercise training in Chronic lung diseases.
(5+5+10 = 20 marks) | (20) |
| 2A) | Write a short note on Pulmonary Rehabilitation approach for asthma and cystic fibrosis.
(5+5 = 10 marks) | (10) |
| 2B) | Explain briefly about common Patient centered outcomes measures in Pulmonary rehabilitation. | (10) |
| 3A) | Define Pulmonary Rehabilitation and add a note on rationale for pulmonary rehabilitation. | (5) |
| 3B) | Enlist any five strategies to improve success in Pulmonary Rehabilitation. | (5) |

-----End-----

Question Paper

Exam Date & Time: 25-Jun-2024 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION - JUNE 2024
SUBJECT: RES6022 - SLEEP DISORDERS IN RESPIRATORY CARE
(SPECIALIZATION: ADULT RESPIRATORY CARE/NEONATAL AND PAEDIATRIC RESPIRATORY CARE)
(2021 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- | | | |
|-----|---|------|
| 1A) | Define Complex Sleep Apnea (CompSA). | (2) |
| 1B) | Explain the incidence, pathophysiology, polysomnographic findings, and treatment of CompSA.
(2+6+4+6 = 18 marks) | (18) |
| 2A) | Explain the types of hypocapnic central sleep apnea syndrome. | (10) |
| 2B) | Outline the important events in the development of sleep medicine and sleep research in India. | (10) |
| 3A) | Explain the effects of mood disorders on sleep. | (5) |
| 3B) | Explain the steps of diagnosing pediatric OSA. | (5) |

-----End-----

Question Paper

Exam Date & Time: 27-Jun-2024 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION - JUNE 2024
SUBJECT: RES6102 - ADULT RESPIRATORY THERAPY SCIENCE
(SPECIALIZATION: ADULT RESPIRATORY CARE)
(2021 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

1. A patient intubated for pneumonia is on VCV mode with FiO_2 0.4; PEEP 5; VT 400 ml. The consultant asks the RT to assess the patient for weaning and extubation.

- | | | |
|-----|---|-----|
| 1A) | Enumerate the steps to assess prior to weaning the patient. | (5) |
| 1B) | How would you wean this patient from a controlled mode of ventilation? | (5) |
| 1C) | Describe the criteria for extubation. | (5) |
| 1D) | Post extubation patient develops stridor in 15 min. How would you manage? | (5) |

2. A patient on VCV mode has a PIP of 25 cmH_2O and $\text{P}_{\text{plateau}}$ of 18 cmH_2O . Explain the following scenario with ventilator graphics and the possible cause.

- | | | |
|-----|---|------|
| 2A) | The PIP rises to 30 cmH_2O from 25 cmH_2O and $\text{P}_{\text{plateau}}$ remains 18 cmH_2O . | (10) |
| 2B) | The PIP rises to 30 cmH_2O from 25 cmH_2O and $\text{P}_{\text{plateau}}$ to 23 cmH_2O from 18 cmH_2O . Both rise in PIP as well as $\text{P}_{\text{plateau}}$. | (10) |
| 3A) | Explain the indications of Venovenous ECMO. List the parameters that are monitored for a patient on ECMO.
(5+5 = 10 marks) | (10) |
| 3B) | Define Ventilator induced diaphragm dysfunction. Explain the pathophysiology of Ventilator induced diaphragm dysfunction. | (10) |
| 3C) | Draw a labelled waveform of APRV mode of ventilation and explain the parameters set in APRV mode.
(5+5 = 10 marks) | (10) |
| 3D) | List all the alarms set on a ventilator with their minimum and maximum range and significance of each. | (10) |
| 4A) | Describe the titration of BiPAP using blood gas values. | (5) |
| 4B) | List the five strongly recommended VAP Bundle of Care. | (5) |
| 4C) | Explain Equal Pressure Point (EPP) in airway of an obstructive lung disease. | (5) |
| 4D) | Explain NIV support as a bridge to extubation in patients with cardiac dysfunction. | (5) |

-----End-----

Question Paper

Exam Date & Time: 29-Jun-2024 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION - JUNE 2024

SUBJECT: RES6104 - ADULT EMERGENCY MEDICAL SERVICES

(SPECIALIZATION: ADULT RESPIRATORY CARE)

(2021 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

1. A 28-year-old male with a sudden onset of chest pain which started around 9 am in the morning accompanied by two episodes of vomiting and profuse sweating. The patient was taken to the emergency triage and investigations were sent. ECG showed ST segment elevation.

- | | | |
|-----|---|------|
| 1A) | Diagnose the case and justify it. | (2) |
| 1B) | List the risk factors for the same. | (2) |
| 1C) | Explain Pathophysiology. | (6) |
| 1D) | Add a note on Management as per the American Heart Association (AHA). | (10) |

- | | | |
|----|--|------|
| 2) | | (20) |
|----|--|------|



- a) Identify the rhythm and justify.
b) Add a note on the management of this case.
(2+18 = 20 marks)

- | | | |
|-----|---|------|
| 3A) | Outline the components and explain the secondary survey and ongoing examination performed during trauma life support. | (10) |
| 3B) | Explain in detail about difficult airway management in trauma. | (10) |
| 3C) | Explain in detail about the management strategy for post-return of spontaneous circulation (ROSC). | (10) |
| 3D) | Write a short note on Targeted Temperature management. | (10) |
| 4A) | Explain briefly about the insertion of Laryngeal Mask Airway (LMA). | (5) |
| 4B) | Explain briefly on Hypertensive emergencies. | (5) |
| 4C) | Explain the pathophysiology of Hypovolemic shock. | (5) |
| 4D) | Explain the management of Cardiac Tamponade. | (5) |

-----End-----

Question Paper

Exam Date & Time: 27-Jun-2024 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION - JUNE 2024
SUBJECT: RES6202 - PEDIATRIC AND NEONATAL RESPIRATORY THERAPY SCIENCE
(SPECIALIZATION: NEONATAL & PAEDIATRIC RESPIRATORY CARE)
(2021 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- | | | |
|-----|--|------|
| 1) | Explain the phase variables of airway pressure release ventilation (APRV) mode. Discuss the advantages and disadvantages, initial ventilator settings, management strategy and the weaning protocol in APRV.
(2+6+4+8 = 20 marks) | (20) |
| 2) | Explain the pathophysiology of meconium aspiration syndrome (MAS) and discuss on the mechanical ventilation strategy.
(8+12 = 20 marks) | (20) |
| 3A) | Outline the ventilator management strategy and the weaning protocol used in high frequency oscillatory ventilation (HFOV). | (10) |
| 3B) | Explain the diagnosis and management of ventilator associated pneumonia in neonates. | (10) |
| 3C) | Summarize the physiological effects of prone ventilation on oxygenation. | (10) |
| 3D) | Discuss the physiology and evidence-based updates related to prone ventilation.
(5+5 = 10 marks) | (10) |
| 4A) | What is auto-PEEP? Discuss troubleshooting for the same. | (5) |
| 4B) | Explain two types of extra-corporeal membrane oxygenation (ECMO). | (5) |
| 4C) | Explain the different techniques of surfactant administration. | (5) |
| 4D) | Explain in detail about the Edi catheters. | (5) |

-----End-----

Question Paper

Exam Date & Time: 29-Jun-2024 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION - JUNE 2024
SUBJECT: RES6204 - PEDIATRIC AND NEONATAL EMERGENCY MEDICAL SERVICES
(SPECIALIZATION: NEONATAL & PAEDIATRIC RESPIRATORY CARE)
(2021 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) You are called to attend a delivery of a 37 weeker. Antenatally the test revealed meconium-stained amniotic fluid with decreased foetal movement. Once delivered, the baby was non vigorous. As a respiratory therapist being a part of the resuscitation team, how would you manage in this situation. (20)
- 2) Define shock. Distinguish between compensated and hypotensive shock. (20)
- 3A) a) Identify the rhythm and explain the management for the same. (10)
-
- b) Enlist the components of high-quality CPR. (8+2 = 10 marks)
- 3B) Explain the management of traumatic brain injury and chest injury. (10)
- 3C) Discuss on lung ultrasound. (10)
- 3D) Explain about the different mechanical aids for CPR. (10)
- 4A) Explain about the synchronized cardioversion. (5)
- 4B) Elaborate on the management of thermal injury and smoke inhalation injury. (5)
- 4C) Explain spinal stabilization of a patient requiring respiratory support in the emergency room. (5)
- 4D) Explain the procedure needle thoracentesis and thoracotomy. (5)

-----End-----