

Question Paper

Exam Date & Time: 16-Feb-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION - FEBRUARY 2023
SUBJECT: RES3101- NEONATAL RESPIRATORY CARE
(2020 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Explain the various physiological effects of CPAP. Explain the indications and contraindications for CPAP. Illustrate the various weaning strategies that have been used for withdrawing CPAP in infants. Identify commonly used delivery systems and nasal interfaces for delivering CPAP. (20)
(5+5+5+5 = 20 marks)
- 2) Explain the pathophysiology and classification of Congenital diaphragmatic hernia (CDH). Identify the clinical features and diagnostic approach of CDH. Illustrate the ventilator management for pre and post -surgical management of CDH. (20)
(4+3+3+4+6 = 20 marks)
- 3) Illustrate the NRP algorithm. (10)
- 4) Explain the management of Meconium aspiration syndrome in detail. (10)
- 5A) Explain the pathophysiology of Transient tachypnea of the newborn. (5)
- 5B) Explain about tetralogy of fallot. (5)
- 5C) Illustrate the ventilator management for Tracheoesophageal fistula. (5)
- 5D) Briefly explain the pathophysiology of Persistent pulmonary hypertension of the newborn. (5)
- 5E) Explain management of apnea of prematurity. (5)
- 5F) Explain the therapeutic approach of Bronchopulmonary dysplasia (5)
- 6A) List the chest radiograph features of Respiratory distress syndrome and Meconium aspiration syndrome. (2)
- 6B) List the risk factors and complications of asphyxia in the neonate. (2)
- 6C) Identify the complications resulting from non - invasive ventilation. (2)
- 6D) Identify disease processes associated with surfactant deficiency, dysfunction, or inactivation. (2)
- 6E) List the five stages of fetal lung development and the gestational age at which they occur. (2)

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Question Paper

Exam Date & Time: 17-Feb-2023 (10:00 AM - 01:00 PM)




MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc.(RESPIRATORY THERAPY) DEGREE EXAMINATION - FEBRUARY 2023
SUBJECT: RES3102- CRITICAL CARE MONITORING AND MANAGEMENT
(2020 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Explain the pre-requisites, site selection and the preparation for arterial line insertion. (20)
(5+5+10 = 20 marks)
- 2) A 55-year-old male came to Emergency Triage with distress. A 12-lead ECG was obtained. Identify the rhythm in the below picture and explain the stepwise management for this patient. Enlist five H's and five T's. List the indications for Coronary artery bypass grafting. (20)

(1+10+5+4 = 20 marks)
- 3) A 70-year-old female, known hypertensive presents to emergency department with complaints of severe headache, sudden left sided weakness, slurring of speech and imbalance followed by decreased level of consciousness. Identify the case scenario and outline its management. (10)
(2+8 = 10 marks)
- 4) Write the causes for congestive heart failure (CHF). Write the pathophysiology and management of CHF (10)
(5+5 = 10 marks)
- 5A) Write a short note on pacemaker (5)
- 5B) List five Indications for Intracranial pressure monitoring (5)
- 5C) Explain the pathophysiology of Congestive heart failure (5)
- 5D) Explain different types of obstructive shock (5)
- 5E) List five complications associated with Intercostal drainage (5)
- 5F) List the clinical manifestation associated with Tension pneumothorax (5)
- 6A) List two shockable rhythm (2)
- 6B) List the ANY TWO-microorganism involved in shock (2)
- 6C) List the clinical use of Pulmonary artery catheter (2)
- 6D) List two complication of hemodialysis (2)
- 6E) Define Systemic Inflammatory Response Syndrome (2)

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Question Paper

Exam Date & Time: 15-Feb-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.Sc.(RESPIRATORY THERAPY) DEGREE EXAMINATION - FEBRUARY 2023
SUBJECT: RES3121- MECHANICAL VENTILATION - I
(2020 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) A 50-year-old male patient with an ideal body weight of 70 kg, diagnosed with pancreatitis in breathing difficulty and severe hypoxemia was intubated. The chest X-ray showed diffuse bilateral coalescent infiltrates. Explain the pathophysiology of ARDS. Select the mode and appropriate settings for managing this patient. Explain in detail the techniques to improve oxygenation in patients with ARDS. (20)
(5+5+10 = 20 marks)
- 2) Explain in brief the working principle of pulse oximetry and explain the physiologic and technical concerns about using the pulse oximeter. Compare the advantages and disadvantages of volume-controlled and pressure-controlled ventilation. (20)
(10+10 = 20 marks)
- 3) Explain in detail the components of a ventilator flow sheet. (10)
- 4) Explain the differences in function among CMV, SIMV and spontaneous ventilation. (10)
- 5A) Explain the guidelines for management of patients with COPD on ventilator. (5)
- 5B) Illustrate air leak on the pressure volume and flow volume loops. (5)
- 5C) Explain the types of capnometers. (5)
- 5D) Explain the advantages and disadvantages of usage of normal saline for endotracheal suction. (5)
- 5E) Distinguish between an open-loop and closed-loop system in mechanical ventilation. (5)
- 5F) Explain the difference between full and partial ventilatory support. (5)
- 6A) What are the respiratory rates provided in the three types of high frequency ventilators? (2)
- 6B) List ANY FOUR ventilatory mechanics and their critical value that may indicate a need for mechanical ventilation. (2)
- 6C) List the parts of the patient circuit that increases mechanical dead space. (2)
- 6D) Explain the emergency actions during a ventilator malfunction. (2)
- 6E) Explain the components of resistance in a mechanically ventilated patient. (2)

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