

Question Paper

Exam Date & Time: 05-Jan-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER M. Sc. RT DEGREE EXAMINATION - JANUARY 2023
SUBJECT: RES6001 - RESPIRATORY THERAPY SCIENCE
(ADULT RESPIRATORY CARE/NEONATAL AND PAEDIATRIC RESPIRATORY CARE)
(2021 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Define the properties of liquid. Write the clinical application for Boyle's law and Charles law. Define relative humidity. Define the different patterns of flow. What is Bernoulli's principle? List the devices that work on Bernoulli's principle. (20)
(6+4+2+3+1+4 = 20 marks)
- 2) Describe in details the working principle of a mechanical ventilator. List the different modes of mechanical ventilation. Explain about any one mode of mechanical ventilation. Explain phase variable. (20)
(8+2+4+6 = 20 marks)
- 3A) Define time constant. What is the normal time constant? Explain different types of lung filling and emptying based on time constants. (10)
(2+1+7 = 10 marks)
- 3B) Explain the steps of oro-tracheal intubation of an adult. (10)
- 3C) Outline the effects of mechanical ventilation on oxygenation, ventilation, and lung mechanics. (10)
- 3D) Explain the primary causes of type I respiratory failure. (10)
- 4A) Write a short note on lung protective ventilation. (5)
- 4B) With a neat labelled diagram mention any 5 abnormal ventilator graphics. (5)
- 4C) Explain the therapist driven protocol for weaning. (5)
- 4D) Outline the measures of troubleshooting inappropriate trigger setting. (5)

-----End-----

Question Paper

Exam Date & Time: 07-Jan-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

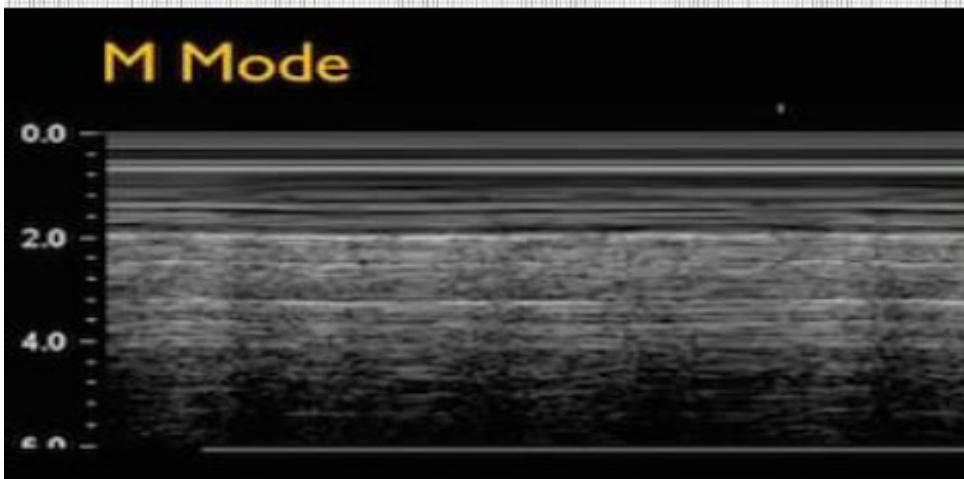
THIRD SEMESTER M.Sc. (RT) ADULT RESPIRATORY CARE DEGREE EXAMINATION - JANUARY 2023
SUBJECT: RES6101- ADULT CRITICAL CARE
(2021 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

1) During insertion of central line, 45-year-old male patient suddenly developed chest pain and dyspnea. His HR is 160 and BP is 90/50 mmHg. ECG and lung ultrasound were ordered, and the findings are given below.



1A) Explain the ECG features and justify your diagnosis.

(4)

(2+2 = 4 marks)

- 1B) Outline the management for this condition. (4)
- 1C) Explain the management of adult cardiac arrest including the post cardiac arrest care. (12)
-
- 2) List the causes of brain death and explain the evaluation of brain death in the ICU. (20)
(4+16 = 20 marks)
- 3A) Define Acute Coronary Syndrome. Explain the pathophysiology with the help of a diagram. (10)
(2+8 = 10 marks)
- 3B) Outline the pathophysiology and explain the grading of thermal injuries. (10)
(5+5 = 10 marks)
- 3C) Explain the management of traumatic brain injury. (10)
- 3D) Define acute pancreatitis. Discuss the diagnosis and management of acute pancreatitis. (10)
(2+8 = 10 marks)
- 4A) Define acute liver failure and list the clinical manifestations. (5)
- 4B) List the causes and clinical features of hypercalcemia. (5)
- 4C) Explain the management of hanging. (5)
- 4D) Outline the pathophysiology of snake bite. (5)

-----End-----

Question Paper

Exam Date & Time: 07-Jan-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER M.Sc. (RT) NEONATAL & PAEDIATRIC RESPIRATORY CARE DEGREE EXAMINATION - JANUARY
2023

SUBJECT: RES6201- PEDIATRIC AND NEONATAL CRITICAL CARE
(2021 SCHEME)

Answer ALL questions.

Marks: 100

Duration: 180 mins.

- 1) 30-year-old pregnant woman is undergoing emergency LSCS I /V/O PPROM. The expected gestational age is 27 weeks with expected weight of 950 grams. You are called to attend the delivery. Explain your management in the delivery room and in NICU. (20)
(10+10 = 20 marks)
- 2) Explain the pathogenesis, clinical presentation, and treatment of the Bronchopulmonary dysplasia. (20)
(5+5+10 = 20 marks)
- 3A) A 4-year-old girl child presents to the emergency room complaining of low-grade fever, malaise, rhinorrhoea, and hoarse voice from last 4 days. Since yesterday the child is having inspiratory stridor and a "barky" cough with respiratory distress. Physical examination reveals inspiratory stridor, nasal flaring; nasal congestion; use of accessory muscles; and suprasternal, subcostal, and intercostal retractions along with stridor. All the symptoms worsen when the child is agitated. (10)
What is the diagnosis?
Explain the management?
Write a short note on foreign body aspiration.
(2+3+5 = 10 marks)
- 3b) Define ARDS. Discuss the Pathophysiology of ARDS in children. (10)
(5+5 = 10 marks)
- 3C) Discuss the basic management of thermal injury, smoke inhalation and drowning. (10)
- 3D) Identify the most common central and peripheral nervous system conditions causing neuromuscular and respiratory impairment. (10)
- 4A) Discuss the anatomical classification of tracheoesophageal fistula and esophageal atresia. (5)
- 4B) Write a short note on foreign body aspiration. (5)
- 4C) What strategies are used to prevent SIDS. (5)
- 4D) Write a short note on periventricular leukomalacia. (5)

-----End-----