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## MANIPAL UNIVERSITY

SECOND YEAR B. Sc. R.T. DEGREE EXAMINATION – JUNE 2008

SUBJECT: RESPIRATORY DISEASE PROCESSES

Tuesday, June 10, 2008

Time: 3 Hrs.

Max. Marks: 80

*✍* Answer all questions. Draw diagrams wherever necessary.

1. Describe the causes, Pathophysiology and management of pulmonary edema.  
(5+5+6 = 16 marks)
2. Define poison. Classify poisons with examples. Outline general measures of management of a case of poisoning.  
(2+6+8 = 16 marks)
3. Write short notes on:
  - 3A. Spacers in asthma
  - 3B. Management of snakebite
  - 3C. Hypersensitivity pneumonitis
  - 3D. Grading of dyspnoea
  - 3E. Risk factors of Tuberculosis
  - 3F. What are the effects of drowning on respiratory and cardiovascular system?  
(8×6 = 48 marks)



**MANIPAL UNIVERSITY**  
**SECOND YEAR B. Sc. R.T. DEGREE EXAMINATION – JUNE 2008**  
**SUBJECT: DIAGNOSTIC TECHNIQUES**

Wednesday, June 11, 2008

Time: 3 Hrs.

Max. Marks: 80

✍ **Draw diagrams wherever necessary.**

✍ **Answer to the question and avoid padding of answers.**

1. Draw a labeled diagram of the conduction system of the heart. What are the electrocardiogram (ECG) changes in inferior wall infarction, anterior-lateral ischemia, lateral wall myocardium ischemia and supraventricular tachycardia?

(8+2+2+2+2 = 16 marks)

2. What do you mean by equal pressure point? What is the significance of equal pressure point? Describe the method to measure the ability of the lungs to transfer gases across the alveolar-capillary membrane.

(4+4+8 = 16 marks)

3. Write short notes:

3A. Radiographic features of Acute Respiratory Distress Syndrome and Pleural effusion.

(4+4 = 8 marks)

3B. Brief the method of sampling arterial blood gas (ABG). How is it transported?

(4+4 = 8 marks)

3C. Preoperative respiratory evaluation of a patient at the bedside.

(8 marks)

3D. What is PCWP? Describe how a pressure trace obtained from a pulmonary artery catheter helps in obtaining correct placement of the catheter.

(2+6 = 8 marks)

3E. Enumerate the various views for radiological chest examination and briefly discuss on each view.

(8 marks)

3F. With the help of a diagram draw the flow/ volume loop of fixed upper airway obstruction, variable extrathoracic upper airway obstruction and variable intrathoracic upper airway obstruction.

(8 marks)



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## MANIPAL UNIVERSITY

SECOND YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2008

SUBJECT: APPLIED CARDIOPULMONARY ANATOMY AND PHYSIOLOGY

Thursday, June 12, 2008

Time: 1½ Hrs.

Max. Marks: 40

- ✍ Answer to the point. Unnecessary padding of answers will be counterproductive.
- ✍ Draw diagrams wherever necessary.

1. Describe in detail the anatomy of systemic circulation. Add a note on systemic vascular resistance. What are the determinants of blood pressure?

(8+4+4 = 16 marks)

2. Write short notes on:

- 2A. Innervation of the lung and thoracic musculature.
- 2B. Compliance of lung and chest wall.
- 2C. Blood buffers.

(8×3 = 24 marks)



**MANIPAL UNIVERSITY**  
**SECOND YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2008**  
**SUBJECT: RESPIRATORY THERAPY SCIENCE II**

Friday, June 13, 2008

Time: 3 Hrs.

Max. Marks: 80

✍ **Answer ALL the questions. Draw diagram wherever necessary.**

1. Explain the followings with the help of a diagram:

- 1A. Assist control – CMV.
- 1B. Constant flow generator (CFG) vs Constant pressure generator (CPG).
- 1C. Intermittent Mandatory Ventilation (IMV).
- 1D. Pressure Support Ventilation (PSV).

(4+(2+2)+4+4 = 16 marks)

2. Enumerate the traditional measurements that are used to predict the success of weaning, giving the criterion for each parameter. Explain the meaning of the term rapid –shallow breathing index, CROP index and describe how you will calculate and interpret both in a young adult whom you are trying to wean from short-term mechanical ventilation.

(6+2+2+2+4 = 16 marks)

3. Write briefly on:

- 3A. Physiological goals and specific clinical objectives of ventilatory support.
- 3B. Ventilatory management of COPD patients.
- 3C. Clinical manifestations of hypoxia and acute ventilatory failure.
- 3D. Output alarms in mechanical ventilators.
- 3E. Procedure for replacing an orotracheal tube with a nasotracheal tube in a patient receiving mechanical ventilation.
- 3F. Guidelines for ventilatory circuit changes.

(8×6 = 48 marks)

