

MANIPAL UNIVERSITY

THIRD YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2009

SUBJECT: RESEARCH METHODOLOGY AND STATISTICS

Monday, June 08, 2009

Time: 3 Hrs.

Max. Marks: 80

✍ Answer all the questions.

1. Define:

- a) Population b) Sample c) Sampling
d) Probability Sampling e) Non Probability Sampling

(2×5 = 10 marks)

2. What is Health Information System? What are the requirements and uses of Health Information System?

(2+4+4 = 10 marks)

3A. Define descriptive epidemiology and enumerate its uses.

3B. The estimated mid-year population for a city in 1990 was 761,335. During the year, the total new cases of tuberculosis reported from this city were 912 and the total cases of tuberculosis reported during the year were 23,000. Calculate the incidence rate and period prevalence rate for tuberculosis in the year 1990.

(5+5 = 10 marks)

4A. List the properties of normal distribution with the help of a neat diagram.

4B. It is observed that the time taken to complete a functional reach test by a group of people is normally distributed with a mean of 12 minutes and a standard deviation of 2 minutes. How many do you expect in a sample of 300 to have a task completion time

- i) Less than 14 minutes ii) Between 8 and 16 minutes

(5+5 = 10 marks)

5. Explain different measurement scales with examples.

(5 marks)

6. Write short notes on:

6A. Steps involved in research process.

6B. Skewness.

6C. Independent and dependent variables.

6D. Reliability and validity.

6E. Crude birth rate and general fertility rate.

(5×5 = 25 marks)

7. Total serum proteins (in gm percent) of 10 subjects are given below.

7.8, 7.2, 7.0, 6.8, 7.4, 6.6, 7.1, 7.5, 5.8, 6.6

Calculate mean and median.

(5 marks)

8. The following table shows tuberculin reaction measured in 206 persons who were never vaccinated. Present the data graphically by a frequency polygon on a histogram.

Reaction in mm.	No. of persons
8-10	24
10-12	52
12-14	42
14-16	48
16-18	12
18-20	08
20-22	14
22-24	06

(5 marks)



MANIPAL UNIVERSITY**THIRD YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2009****SUBJECT: ADVANCED NEONATAL RESPIRATORY CARE**

Tuesday, June 09, 2009

Time: 14:00-17:00 Hrs.

Max. Marks: 80

1. A term neonate weighing 3200 gm born through thick meconium stained amniotic fluid has respiratory failure. When do you consider mechanical ventilation? Describe the first steps of initiation of mechanical ventilation.

(8+8 = 16 marks)

2. What is bronchopulmonary dysplasia? Discuss the etiology, risk factors and chest x-ray findings.

(2+3+3+8 = 16 marks)

3. Write short notes:

3A. What is hyaline membrane disease? Mention risk factors and pathophysiology.

3B. Bag and mask ventilation- describe the parts, attachments, indications and the procedure (NALS recommendations).

3C. Extubation protocol.

3D. Discuss oxygen delivery systems.

3E. Complications of CPAP therapy.

3F. What is the principle behind pulse oxymetry? Describe its characteristics, advantages and limitations.

(8×6 = 48 marks)



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THIRD YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2009

SUBJECT: CARDIOPULMONARY INTENSIVE CARE INCLUDING ADVANCED CARDIAC LIFE SUPPORT

Wednesday, June 10, 2009

Time: 14:00-17:00 Hrs.

Max Marks: 80

Answer all the questions. Unnecessary padding of answers will be counter productive.

1. With the help of a diagram, explain the three-bottle intercostal chest drain system. Discuss the precautions to be taken in a patient with intercostal chest tube and underwater seal.

(10+6 = 16 marks)

2. With the help of a diagram, explain how you would identify ventricular fibrillation. Describe the steps of management of a patient in ventricular fibrillation.

(2+4+10 = 16 marks)

3. Write short notes on:

3A. Tension pneumothorax.

3B. Sodium nitroprusside.

3C. Causes of acute renal failure.

3D. Indications for permanent pacing.

3E. Atropine.

3F. Basic life support in a pregnant patient.

(8×6 = 48 marks)



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THIRD YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2009

SUBJECT: PSYCHOLOGY

Thursday, June 11, 2009

Time: 14:00-17:00 Hrs.

Max Marks: 80

1. Answer any SIX of the following:

- 1A. What is crisis reaction? Discuss the ways of crisis management.
- 1B. Briefly mention the nature and goals of counseling.
- 1C. What is cognitive therapy? Discuss Beck's approach.
- 1D. What is death anxiety? Enumerate the steps involved in the management of death anxiety.
- 1E. Discuss various issues related to Euthanasia.
- 1F. Discuss the biological and learning model of mental disorders.
- 1G. Discuss various sources of stress and its effects on health.
- 1H. Describe the nature and types of psychological assessment.

(10×6 = 60 marks)

2. Write short notes on any FOUR of the following:

- 2A. Aversive therapy.
- 2B. Techniques of supportive psychotherapy.
- 2C. Marital therapy.
- 2D. Time-out technique.
- 2E. Personality disorders.
- 2F. Concept of abnormality.

(5×4 = 20 marks)



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THIRD YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2009

SUBJECT: PULMONARY REHABILITATION

Friday, June 12, 2009

Time: 14:00-17:00 Hrs.

Max Marks: 80

Answer all questions. Draw diagrams wherever necessary.

1. Briefly describe the pathophysiology and clinical features of bronchopulmonary dysplasia. Describe your strategy of pulmonary rehabilitation of a child with bronchopulmonary dysplasia.

(4+4+8 = 16 marks)

2. Describe the mechanisms and management of dyspnoea.

(6+10 = 16 marks)

3. Write short notes on:

3A. Noninvasive ventilation.

3B. Tobacco dependence.

3C. Oxygen therapy in pulmonary rehabilitation.

3D. Walk test.

3E. Ventilatory muscle training.

3F. Sleep disorder in patients with COPD.

(8×6 = 48 marks)



MANIPAL UNIVERSITY**THIRD YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2009****SUBJECT: RESPIRATORY THERAPY SCIENCE – III**

Saturday, June 13, 2009

Time: 14:00-17:00 Hrs.

Max Marks: 80

✍ Answer all questions. Draw diagrams wherever necessary.

1. What differentiates high frequency ventilation (HFV) from conventional ventilation? Briefly describe the five basic types of HFV. Explain why HFV is considered a “lung protective strategy”.

(2+10+4 = 16 marks)

2. What are the advantages of noninvasive ventilation as opposed to conventional mechanical ventilation? Describe the indications, contraindications and clinical use of noninvasive ventilation.

(4+12 = 16 marks)

3. Write short notes on:

- 3A. Rationale behind use of hyperbaric oxygen therapy in decompression sickness.
3B. Physical principles, indications and guidelines for use of helium in respiratory care.
3C. Indications, contraindications and complications of extracorporeal membrane oxygenation.
3D. Causes, detection and prevention of volutrauma during mechanical ventilation.
3E. Incentive spirometry.
3F. T-tube weaning and spontaneous breathing trial.

(8×6 = 48 marks)

