Reg. No.										

MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

THIRD YEAR B.SC.R.T.T. DEGREE EXAMINATION – JUNE 2006

SUBJECT: RESEARCH METHODOLOGY AND STATISTICS

Wednesday, June 14, 2006

Time: 3 Hrs. Max. Marks: 80

1A. Differentiate Research method and research methodology.

1B. What is a variable? Distinguish between discrete and continuous variable with one example each.

(5+(2+4) = 11 marks)

2A. Explain the characteristics of Ordinal scale with example.

2B. List the advantages of stratified random sampling over simple random sampling. Give an example for stratified random sampling.

(4+(3+2) = 9 marks)

3. Following is the height of 30 students in a class.

Height (in cm) of 30 students in a class				
157.0	162.9	153.4	166.2	159.4
148.7	158.5	161.0	173.7	158.0
161.0	157.5	154.9	154.9	172.7
153.9	169.9	157.5	168.8	160.0
167.9	158.2	153.7	154.8	152.4
151.4	146.3	152.1	172.1	159.4

i) Construct a frequency table with class intervals 145-150, 150 – 155, ... etc. for the following data.

ii) Construct relative (percentage) frequency distribution.

iii) Find out the percentage of students with height less than 155 cm.

(5+3+2 = 10 marks)

4A. Calculate median and standard deviation for the following data.

Sys. B.P (mmHg): 125, 125, 117, 125, 120, 129, 125, 116

4B. Define and explain the use of Coefficient of Variation.

(2+4)+5 = 11 marks)

5A. Explain negative and positive correlation with example.

5B. If the total cholesterol values for a certain population are approximately normally distributed with a mean of 200 mg/100 ml and a standard deviation of 30 mg/100 ml, find the probability that an individual picked at random from this population will have a cholesterol value:

i) Between 230 and 260 mg/100 ml ii) Less than 170 mg/100ml

(4+5 = 9 marks)

6A. Enumerate the uses of health information system. List the requirements to be satisfied by the health information systems.

6B. Explain the terms incidence and prevalence with example.

((3+2) +5 = 10 marks)

7A. Differentiate Reliability and validity with example.

7B. Define infant mortality rate. What are its uses? Discuss its indications.

(5+5 = 10 marks)

8. Define epidemiology. What is descriptive epidemiology? State its uses.

(2+5+3 = 10 marks)

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MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

THIRD YEAR B.Sc. R.T.T. DEGREE EXAMINATION – JUNE 2006

SUBJECT: ADVANCED NEONATAL RESPIRATORY CARE

Thursday, June 15, 2006

Time: 3 Hrs. Max. Marks: 80

✍ Answer **ALL** questions.

1. A 1500 gm premature baby is on ventilator for hyaline membrane disease. Discuss in detail the assessment of adequacy of oxygenation and ventilation.

(8+8 = 16 marks)

2. How does the neonatal circulation differ from that of a fetus? Describe the cardiopulmonary events that accompany the normal transition at birth.

(4+6+6 = 16 marks)

3. Write short notes:

(8×6 = 48 marks)

3A. What do you mean by persistent pulmonary hypertension of the newborn? Mention the risk factors for the same.

3B. Role of humidification chamber in neonatal ventilation.

3C. Complications of CPAP therapy.

3D. A neonate is apneic at birth with heart rate of 80/min. How do you resuscitate this baby?

3E. Discuss the clinical presentations of congenital heart diseases.

3F. A 1200 gm baby born at 32 week has RR of 84/min, retractions and grunt at one hour of life. What is the most likely diagnosis? Mention its risk factors and pathophysiology.

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MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

THIRD YEAR B.Sc. R.T.T. DEGREE EXAMINATION – JUNE 2006

SUBJECT: CARDIOPULMONARY INTENSIVE CARE INCLUDING ADVANCED CARDIAC LIFE SUPPORT

Friday, June 16, 2006

Time: 3 Hrs. Max Marks: 80

Answer ALL questions.

1. Name four inotropes and discuss in detail any one of them.

(4+12 = 16 marks)

2. Describe the various steps of basic life support in the management of an adult patient who has become unresponsive in a hospital ward.

(16 marks)

3. Write short notes on:

(8×6 = 48 marks)

3A. Management of flail chest.

3B. Pneumonectomy.

3C. Electrolyte disturbances in acute renal failure.

3D. Pacemaker syndrome.

3E. Atropine.

3F. Nitroglycerine.

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MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

THIRD YEAR B.Sc. R.T.T. DEGREE EXAMINATION – JUNE 2006

SUBJECT: PSYCHOLOGY

Saturday, June 17, 2006

Time: 3 Hrs. Max Marks: 80

1. Answer any **SIX** of the following:

(10×6 = 60 marks)

1A. Discuss the nature and techniques of supportive psychotherapy.

1B. Discuss case history and testing methods with their merits and demerits.

1C. Discuss oriental and Indian concepts of mental health and illness.

1D. Discuss the impact of various neurotic disorders on adjustment.

1E. What are the ethical and legal issues related to euthanasia?

1F. What is psychotherapy? Discuss client-centered therapy.

1G. Outline the principles of marital and family therapy.

1H. Discuss the stages of crisis reaction and steps involved in helping people in crisis.

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

(5×4 = 20 marks)

2A. Dissociative disorder.

2B. Assessment of disability.

2C. ICD classification system.

2D. Psychodynamic model of mental disorder.

2E. Stress and illness.

2F. Factors that help in adjustment.

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MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

THIRD YEAR B.Sc. R.T.T. DEGREE EXAMINATION – JUNE 2006

SUBJECT: PULMONARY REHABILITATION

Monday, June 19, 2006

Time: 3 Hrs. Max Marks: 80

Answer all questions. Draw diagrams wherever necessary.

1. What do you understand by the term 'pulmonary rehabilitation'? Discuss how it may be applied for patients with Chronic Obstructive Pulmonary Disease (COPD).

(4+12 = 16 marks)

2. Describe the mechanisms and management of dyspnoea.

(8+8 = 16 marks)

3. Write short notes on:

3A. Noninvasive ventilation.

3B. Preventive aspects of chronic pulmonary diseases.

3C. Guidelines for evaluating cough.

3D. Goals of paediatric pulmonary rehabilitation.

3E. Indications and contraindications for bullectomy.

3F. Role of respiratory therapist in the rehabilitation of a patient with neuromuscular disease.

(8×6 = 48 marks)

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MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

THIRD YEAR B.Sc. R.T.T. DEGREE EXAMINATION – JUNE 2006

SUBJECT: RESPIRATORY THERAPY SCIENCE - III

Tuesday, June 20, 2006

Time: 3 Hrs. Max Marks: 80

Answer all questions. Draw diagrams wherever necessary.

1. Define the term Scalar and Loop. Write six basic curves used to measure pressure, volume and flow. Describe with the help of appropriate diagrams the pressure-volume and flow-volume loops in a normal individual, individual with altered lung mechanics, artificial airway obstruction and leak inside ventilatory circuit.

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

2. List indications for hyperbaric oxygen therapy (HBOT). What will be the partial pressure of oxygen in the alveoli (PAO_2) if a patient is given 100% oxygen at 6 atmospheres absolute? Enlist complications and contraindications of HBOT.

(6+4+3+3 = 16 marks)

3. Write briefly on:

3A. Extracorporeal membrane oxygenation (ECMO).

3B. Murray lung scoring and acute physiology and chronic health evaluation in ICU management.

3C. Permissive hypercapnia.

3D. Describe in detail the "Respiratory care" plan you would design for a patient admitted in the pulmonology ward with left lower lobe pneumonic consolidation. He has productive sputum and poor cough effort and is on controlled oxygen therapy of 40% with 10L/min of O_2 flow.

3E. Adaptive pressure ventilation (APV).

3F. Describe the mechanism of oxygenation in high frequency ventilation.

(8×6 = 48 marks)