

MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

THIRD YEAR B.Sc. R.T.T. DEGREE EXAMINATION – JUNE 2005**SUBJECT: BASIC STATISTICS AND RESEARCH METHODOLOGY**

Wednesday, June 15, 2005

Time: 3 Hrs.

Max. Marks: 80

Answer all the questions.

- 1A. Discuss the role of Biostatistics in health care delivery system.
- 1B. What are the various types of variables in research? Give examples for each. (5+5 = 10 marks)
2. Define sampling. What are the advantages of probability sampling? Briefly discuss the various types of probability sampling methods. (1+2+7 = 10 marks)
- 3A. What is central tendency? Mention the measures of central tendency with merits and demerits. (1+3+3 = 7 marks)
- 3B. In a study of depressed patients, it was found that the age at onset of depression for those in dysfunctional families was normally distributed with a mean of 30 years and a standard deviation of 9 years. If a depressed person is selected at random from a dysfunctional family, find the probability that the patient was
- i) more than 21 years ii) Between 21 and 48 years. (3 marks)
4. Define health information system. What are its uses? Mention the sources of health information system. (1+3+6 = 10 marks)
5. Write short essays on: (5×8 = 40 marks)
- 5A. Scales of measurement.
- 5B. Basic concepts of research.
- 5C. Role of diagrammatic presentation of data.
- 5D. Normal distribution.
- 5E. Concept of health and diseases.
- 5F. Hospital Statistics.
- 5G. Descriptive Epidemiological methods.
- 5H. Correlation with scatter diagram.



MANIPAL ACADEMY OF HIGHER EDUCATION

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THIRD YEAR B.Sc. R.T.T. DEGREE EXAMINATION – JUNE 2005**SUBJECT: ADVANCED NEONATAL RESPIRATORY CARE**

Thursday, June 16, 2005

Time: 3 Hrs.

Max. Marks: 80

✍ Answer ALL the following questions.

✍ Draw diagrams wherever necessary.

1. What are the mechanisms of heat loss in neonates? Discuss the various methods to prevent heat loss in preterm neonates. How do you prevent heat loss during neonatal resuscitation?

(6+6+4 = 16 marks)

2. What are the indications for mechanical ventilation? How do you initiate mechanical ventilation? Add a note on extubation protocol.

(6+6+4 = 16 marks)

3. Write briefly on:

3A. Apnoea of prematurity.

3B. A 3.2 kg term baby born through meconium is found to be apnoeic at birth. How do you manage this baby?

3C. Endotracheal suction in a neonate on ventilator support for persistent pulmonary hypertension.

3D. Indications, contraindications and technique of bag and mask ventilation during neonatal resuscitation.

3E. General care of the baby on ventilator.

3F. Cardiopulmonary changes occurring at birth.

(8×6 = 48 marks)



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THIRD YEAR B.Sc. R.T.T. DEGREE EXAMINATION – JUNE 2005

SUBJECT: CARDIOPULMONARY INTENSIVE CARE INCLUDING ADVANCED CARDIAC LIFE SUPPORT

Friday, June 17, 2005

Time: 3 Hrs.

Max Marks: 80

Answer ALL questions. Draw diagrams wherever necessary.

1. How can you differentiate between hypovolaemic shock and septic shock? Outline the management of a patient admitted in the emergency room following trauma with a suspected fracture femur, heart rate of 120 beats per minute, blood pressure of 80/60 mmHg and respiratory rate of 15 breaths per minute.

(6+10 = 16 marks)

2. Briefly describe the functional anatomy of the glomerulus and the normal functions of the kidney.

(8+8 = 16 marks)

3. Write briefly on:

3A. Mechanism of action of adrenaline, indications for its use, recommended intravenous and endotracheal dosage for cardiac arrest in an adult patient.

3B. Technique of mouth-to-mouth artificial breathing in an adult who has had a cardiac arrest and Heimlich manoeuvre in a conscious adult patient with a foreign body airway obstruction.

3C. Principles of dialysis.

3D. Precautions and care to be taken following insertion of an intercostal tube with underwater seal drainage.

3E. Urine analysis.

3F. Clinical manifestations and treatment of hyperkalaemia.

(8×6 = 48 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION

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THIRD YEAR B.Sc. R.T.T. DEGREE EXAMINATION – JUNE 2005**SUBJECT: PSYCHOLOGY**

Monday, June 20, 2005

Time: 3 Hrs.

Max Marks: 80

✍ Answer the following questions.1. Answer any **SIX** of the following.

(10×6 = 60 marks)

- 1A. Discuss the various behaviour therapy techniques.
- 1B. Discuss the factors that help human growth and adjustment.
- 1C. Discuss ICD 10 and DSM IV classification systems.
- 1D. Outline briefly the principles of family therapy.
- 1E. Describe survey and testing methods and discuss their merits and demerits.
- 1F. Discuss learning and cognitive models of mental disorders.
- 1G. Discuss the clinical characteristics of any two major psychotic disorders.
- 1H. Define stress and discuss any two stress related emotion.

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

(5×4 = 20 marks)

- 2A. Stress and illness.
- 2B. Assessment of intelligence.
- 2C. Attitudes towards death.
- 2D. Disability – governmental support.
- 2E. Models of abnormality.
- 2F. Client-centered therapy.



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THIRD YEAR B.Sc. R.T.T. DEGREE EXAMINATION – JUNE 2005

SUBJECT: PULMONARY REHABILITATION

Tuesday, June 21, 2005

Time: 3 Hrs.

Max Marks: 80

Answer all questions. Draw diagrams wherever necessary.

1. Describe the assessment and management of hypoxaemia in advanced lung disease.
(16 marks)

2. Briefly describe the indications, technique and complications associated with noninvasive ventilation using facemask.
(16 marks)

3. Write short notes on:
 - 3A. Goals of paediatric pulmonary rehabilitation
 - 3B. Sleep disorders in advanced lung disease
 - 3C. Dry powder inhalers
 - 3D. Ventilatory muscle training
 - 3E. Long term oxygen therapy
 - 3F. Postural drainage

(8×6 = 48 marks)



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THIRD YEAR B.Sc. R.T.T. DEGREE EXAMINATION – JUNE 2005**SUBJECT: RESPIRATORY THERAPY SCIENCE - III**

Wednesday, June 22, 2005

Time: 3 Hrs.

Max Marks: 80

✍ Answer all questions. Draw diagrams wherever necessary.

1. Describe the importance of I:E ratio on i) venous return and ii) distribution of ventilation. What is the I:E ratio that is normally set? Indicate the steps of calculation involved in setting the following ventilatory parameters (tidal volume 500mL; frequency 15 breaths per minute) on a Hamilton Veolar[®] ventilator and a Bear Adult[®] to achieve an I:E ratio of 1:3

(6+2+8 = 16 marks)

2. Define “hypercarbia” and “supercarbia”. What are the effects of hypercarbia on the cardiovascular and respiratory systems? Describe the indications and clinical conduct of the technique of permissive hypercapnia in an adult patient.

(4+4+8= 16 marks)

3. Write briefly on:

- 3A. Relative merits and demerits of airway pressure release ventilation versus biphasic positive airway pressure.
- 3B. Detection and correction of auto-PEEP using ventilator graphic display.
- 3C. Use of hyperbaric oxygen therapy in treatment of decompression sickness.
- 3D. Use of nitric oxide in ventilatory care.
- 3E. Sites and technique of sampling arterial blood in adults and neonates.
- 3F. Noninvasive ventilation in obstructive sleep apnoea syndrome.

(8×6 = 48 marks)

