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MANIPAL UNIVERSITY

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

SUBJECT: ADVANCED NEONATAL RESPIRATORY CARE

Monday, June 16, 2008

Time: 3 Hrs.

Max. Marks: 80

1. Describe the fetal circulation with diagram. Mention the four differences between fetal circulation and neonatal circulation.

(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 transient tachypnea of newborn? Mention risk factors and pathophysiology.
 - 3B. Based on NALS recommendations, what do you understand about ABC of neonatal resuscitation?
 - 3C. Describe the four ways of heat loss in a neonate with examples. Add a note on prevention of heat loss.
 - 3D. Oxygen therapy in neonates- what are the physiologic considerations? Discuss oxygen delivery systems.
 - 3E. Describe ventilator control parameters.
 - 3F. What is the principle behind pulse oxymetry? Describe its characteristics, advantages and limitations.

(8×6 = 48 marks)



MANIPAL UNIVERSITY**THIRD YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2008****SUBJECT: CARDIOPULMONARY INTENSIVE CARE INCLUDING ADVANCED CARDIAC LIFE SUPPORT**

Tuesday, June 17, 2008

Time: 3 Hrs.

Max Marks: 80

- ✍ **Answer ALL questions.**
- ✍ **Draw diagrams wherever necessary.**

1. You are standing in a queue at a bus stop when a middle-aged man standing in front of you suddenly collapses and is unresponsive. Describe in a step-wise fashion what you would do (assuming you are the only person available to provide medical aid).

(16 marks)

2. Define *chronic renal failure*. Outline the respiratory complications of chronic renal failure. A patient who is known to have chronic renal failure (on intermittent haemodialysis) skips dialysis for 15 days and then presents to the emergency room with sudden onset dyspnoea and bilateral coarse crepitations on auscultation of lungs. What is the probable diagnosis and how should it be treated?

(2+6+8 = 16 marks)

3. Write briefly on:

- 3A. Mechanism of action, pharmacological effects, indications and dosage of dobutamine.
- 3B. Differences between neonatal and adult basic life support (BLS) with reference to chest compression (technique and rate) and chest compression-to-ventilation ratio.
- 3C. Definition and clinical features of flail chest.
- 3D. Aetiology of cardiogenic shock.
- 3E. Renal osteodystrophy.
- 3F. Diagnosis and treatment of metabolic acidosis.

(8×6 = 48 marks)



MANIPAL UNIVERSITY**THIRD YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2008****SUBJECT: PSYCHOLOGY**

Wednesday, June 18, 2008

Time: 3 Hrs.

Max Marks: 80

1. Answer any **SIX** of the following:
- 1A. What is Psychotherapy? Discuss Client-centered Psychotherapy.
 - 1B. Discuss the role of biological interventions in the management of mental illness.
 - 1C. Describe the nature and scope of psychological assessment.
 - 1D. What is bereavement counseling? Enumerate on various steps involved in this type of counseling.
 - 1E. Discuss the Indian concept of mental illness.
 - 1F. Discuss psychodynamic and socio-cultural models of mental disorders.
 - 1G. Discuss the concept of stress and its impact on health.
 - 1H. Outline the clinical characteristics of any two types of neurotic disorders.

(10×6 = 60 marks)

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

- 2A. Observation method
- 2B. ICD system of classification
- 2C. Stress-related emotion
- 2D. Electro-convulsive therapy.
- 2E. Token economy
- 2F. Counseling process

(5×4 = 20 marks)



MANIPAL UNIVERSITY

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

SUBJECT: PULMONARY REHABILITATION

Thursday, June 19, 2008

Time: 3 Hrs.

Max Marks: 80

✍ Answer ALL questions. Draw diagrams wherever necessary.

1. How is nicotine dependence diagnosed and treated?
(8+8 = 16 marks)
2. Enumerate a few conditions that may require home mechanical ventilation. Briefly describe various strategies of providing noninvasive ventilation.
(6+10 = 16 marks)
3. Write short notes on:
 - 3A. The shuttle walking test.
 - 3B. Holding chambers.
 - 3C. Lung volume reduction surgery.
 - 3D. Sleep disorders in patients with COPD.
 - 3E. Pharmacological therapy in pulmonary rehabilitation.
 - 3F. Goals of paediatric pulmonary rehabilitation.(8×6 = 48 marks)



MANIPAL UNIVERSITY
THIRD YEAR B.Sc. R.T. DEGREE EXAMINATION – JUNE 2008
SUBJECT: RESPIRATORY THERAPY SCIENCE – III

Friday, June 20, 2008

Time: 3 Hrs.

Max Marks: 80

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

1. List two indications and two contraindications for the use of permissive hypercapnia. Describe the initiation, maintenance and weaning phases of permissive hypercapnia.
(2+2+12 = 16 marks)

2. Describe the physiological basis for the use of prone positioning in acute respiratory distress syndrome. What complications can occur during prone positioning and how are these prevented?
(8+3+5 = 16 marks)

3. Write short notes on:
 - 3A. Methods used to optimise oxygenation and carbon dioxide elimination during high frequency oscillatory ventilation.
 - 3B. Inverse ratio ventilation.
 - 3C. Flow-by mode.
 - 3D. Clinical conduct of noninvasive ventilation.
 - 3E. Define an aerosol and describe with the help of a diagram the design and function of a small volume nebuliser.
 - 3F. Pressure-time and flow-time scalars.(8×6 = 48 marks)



MANIPAL UNIVERSITY

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

SUBJECT: RESEARCH METHODOLOGY AND STATISTICS

Saturday, June 21, 2008

Time: 3 Hrs.

Max. Marks: 80

✍ Answer all the questions.

1. Discuss the role of statistics in health science with example. (5 marks)
2. State the characteristics of Ratio scale. Classify the followings as examples under nominal, ordinal, continuous and discrete data - Weight, Gender, Depression, Age, Temperature, Number of visits to hospital in a year, Stages of Cancer and Blood group. (5 marks)
3. Explain the meaning of dependent and independent variables in research with example. (5 marks)
4. Why do we go for sampling? List any five reasons. (5 marks)
5. Following are the Triglyceride (mg/100 ml) values of 32 adults
159 194 89 174 154 148 90 180 99 196 100 158
93 122 130 158 148 93 85 101 92 183 182 104
110 72 88 108 134 110 84 130
- 5A. Construct a frequency table with class intervals 85-104, 105-124,etc. for the following data.
- 5B. Construct relative (percentage) frequency distribution.
- 5C. Find out the percentage of adults with Triglyceride values less than 145 cm. (5+3+2 = 10 marks)
6. Explain the computation of Mean and Median from raw data with example. (5 marks)
7. The following are the weights in kilograms of a group of 10 students.
41, 48, 59, 42, 51, 58, 67, 54, 69, 51 Compute range and standard deviation. (5 marks)
8. What proportion of cases in a normal distribution are
 - i) Between mean + S.D and mean + 2 S.D
 - ii) Between mean – S.D and mean + 2 S.D

9. Define correlation. Explain positive and negative correlation with suitable examples. (5 marks)
10. List any five sources of health information system. Discuss any one in detail. (2½ + 2½ = 5 marks)
11. Differentiate the terms ratio and proportion with example. (5 marks)
12. What is reliability? Explain any one method of testing reliability. (5 marks)
13. Define infant mortality rate. What are its uses? Discuss its indications. (5 marks)
14. Define epidemiology. Outline the procedures involved in descriptive studies. (2+5+3 = 10 marks)

