

MANIPAL UNIVERSITY

FRIST YEAR MASLP / MOT / MSc. MLT / MSc. RT / MSc. ECHOCARDIOGRAPHY / MSc. CARDIAC CATHETERIZATION & INTERVENTIONAL TECHNOLOGY / OPTOMETRY / MSc. MIT / MSc. RRT & DT / DEGREE EXAMINATION – JUNE 2016

SUBJECT: STATISTICS & RESEARCH METHODS / ADVANCED BIOSTATISTICS & RESEARCH METHODOLOGY / BIOSTATISTICS / ADVANCED BIOSTATISTICS & RESEARCH METHODOLOGY / PAPER IV: EPIDEMIOLOGY & BIOSTATISTICS / PAPER IV: EPIDEMIOLOGY & BIOSTATISTICS / PAPER IV: RESEARCH METHODOLOGY & BIOSTATISTICS / BIOSTATISTICS/ ADVANCED BIOSTATISTICS & RESEARCH METHODOLOGY

Thursday, June 02, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

Answer ALL the questions.

- 1A. Explain the situation for use and computation procedure of mean and median.
 1B. What is cluster sampling? Explain the procedure with example. List the advantages and disadvantages of this technique. (5+5 = 10 marks)
- 2A. Suppose the ages at time of onset of a certain disease are approximately normally distributed with a mean of 12 years and a standard deviation of 3 years. A child has just come down with the disease. What is the probability that the child is:
 i) Between the ages of 9 and 12 years?
 ii) Over 15 years?
 2B. Write a short note on Poisson distribution. (5+5 = 10 marks)
- 3A. Define the following terms:
 i) Power of a test
 ii) P-value
 iii) Type one and type two errors in testing of hypothesis
 3B. Describe with example the situation in which you would use independent sample t-test. What is the null hypothesis tested? List the assumptions. ((1+2+2)+5 = 10 marks)
- 4A. Differentiate parametric and non-parametric tests. Explain the situation for Kruskal-Wallis test.
 4B. Write a short note on the application of Chi-square test. (5+5 = 10 marks)
- 5A. A hospital administrator wishes to know what proportion of discharged patients is unhappy with the care received during hospitalization. How large a sample should be drawn if we let the error margin $d = 0.1$, the confidence coefficient is 0.95, and the anticipated percentage of unhappy patients is 30? (Given $Z_{1-\alpha/2} = 1.96$).
 5B. Write a short note on Logistic Regression. (5+5 = 10 marks)

6. Discuss Cohort study under:

6A. Basic design

6B. Basic features

6C. Basic steps

6D. Merits and demerits

(10 marks)

7. Explain the structure of a scientific research paper.

(10 marks)

8. Write short notes on the following:

8A. Randomized controlled trials

8B. Sensitivity and specificity of a diagnostic test

(5+5 = 10 marks)



MANIPAL UNIVERSITY**FIRST YEAR M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION – JUNE 2016****SUBJECT: BASIC SCIENCES****(SPECIALTY: ADULT CARDIO RESPIRATORY CARE / NEONATAL & PEDIATRIC RESPIRATORY CARE)
(2013 SCHEME)**

Saturday, June 04, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

✍ Long notes:

1. Explain in detail the acid base balance. (Draw diagrams if necessary)
(16 marks)
2. Elaborate on the control of the cardiovascular system.
(16 marks)

3. Short notes:

- 3A. Calcium
- 3B. Upper respiratory tract
- 3C. Distribution of ventilation
- 3D. Determinants of alveolar gas tension
- 3E. Respiratory acidosis
- 3F. Non-steroidal anti-asthma drugs

(8 marks × 6 = 48 marks)



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MANIPAL UNIVERSITY**FIRST YEAR M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION – JUNE 2016****SUBJECT: ADVANCED RESPIRATORY THERAPY SCIENCE I****(SPECIALIZATION: ADULT CARDIO RESPIRATORY CARE / NEONATAL & PAEDIATRIC RESPIRATORY CARE)
(2013 SCHEME)**

Tuesday, June 07, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

 **Draw diagrams wherever necessary.**

1. Describe in detail the pressure changes during spontaneous, positive and negative ventilation.
Discuss about time constant.

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

2. Discuss in detail about work of breathing. Also discuss about time constant.

(8+8 = 16 marks)

3. **Write short notes on:**

3A. Define refractory hypoxemia, Oxygen toxicity in adults.

(2+6 = 8 marks)

3B. Alarm system in mechanical ventilation.

(8 marks)

3C. Airway complications of mechanical ventilation.

(8 marks)

3D. Discuss Auto- PEEP.

(8 marks)

3E. Phase variables of mechanical ventilation.

(8 marks)

3F. Discuss about pressure differences during normal spontaneous breathing.

(8 marks)



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MANIPAL UNIVERSITY

FIRST YEAR M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION – JUNE 2016

SUBJECT: CRITICAL CARE MEDICINE – I
(SPECIALTY: ADULT CARDIO RESPIRATORY CARE)
(2013 SCHEME)

Thursday, June 09, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

✍ Answer all questions.

1. Describe Aetiology, clinical features and management of acute severe asthma?
(2+6+8 = 16 marks)

2. Describe pathophysiology, clinical features, and ICU management of Organophosphorous poisoning.
(4+4+8 = 16 marks)

3. **Write short notes on:**

3A. MRSA in ICU

3B. Rheumatoid arthritis

3C. Pneumothorax

3D. Postoperative Atelectasis

3E. Diagnostic criteria for ARDS

3F. Hyperkalemia

(8 marks × 6 = 48 marks)



MANIPAL UNIVERSITY**FIRST YEAR M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION – JUNE 2016****SUBJECT: CRITICAL CARE MEDICINE I
(SPECIALTY: NEONATAL AND PAEDIATRIC RESPIRATORY CARE)
(2013 SCHEME)**

Thursday, June 09, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

✍ Draw Diagrams Wherever Necessary.

1. A call was given from labor room for a normal term delivery. When you received the baby he was non –vigorous full of meconium stain, what steps will you take to resuscitate this baby? What are the initial ventilator settings? Add a note on advance ventilator settings for this case?

(6+5+5 = 16 marks)

2. Define BPD. Add a note on Northway classification of BPD. Discuss in detail the pathophysiology of BPD.

(4+4+8 = 16 marks)

3. Write short notes on:

3A. Transient tachypnea of newborn

3B. Ventilator Assisted pneumonia

3C. Cystic fibrosis

3D. Chest trauma

3E. Acute respiratory failure

3F. Discuss types of Tracheoesophageal fistula

(8 marks × 6 = 48 marks)

