Reg. No.										

MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION – MAY/JUNE 2018

SUBJECT: ADVANCED RESPIRATORY THERAPY SCIENCE I

(SPECIALIZATION: ADULT CARDIO RESPIRATORY CARE / NEONATAL & PAEDIATRIC RESPIRATORY CARE)

(2013 SCHEME)

Saturday, June 02, 2018

Time: 10:00 – 13:00 Hrs. Max. Marks: 80

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

1. Discuss the physiology effects of positive pressure ventilation on oxygenation, ventilation and lung mechanics.

(6+5+5 = 16 marks)

2. List down the patient-related and ventilator-related causes of sudden respiratory distress in patient receiving ventilator support. What remedies would you apply for each cause?

(8+8 = 16 marks)

3. **Short notes:**

3A. Auto PEEP

3B. Factors affecting aerosol administration on mechanical ventilation

3C. Phase variables

3D. Therapist driven protocol

3E. Cardiovascular effects of positive pressure ventilation

3F. Poliomyelitis epidemic in Scandinavia

(8 marks × 6 = 48 marks)

Reg. No.									

MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION – MAY/JUNE 2018

SUBJECT: CRITICAL CARE MEDICINE – I

(SPECIALTY: ADULT CARDIO RESPIRATORY CARE)

(2013 SCHEME)

Tuesday, June 05, 2018

Time: 10:00 – 13:00 Hrs. Max. Marks: 80

✍ **Answer ALL the questions.**

1. What are the causes of Acute Respiratory Distress Syndrome (ARDS)? Discuss the pathophysiology and clinical features of ARDS. Describe briefly the management of ARDS.

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

2. Describe etiology and clinical features of acute severe asthma? Drug regimen for acute exacerbation of asthma.

(4+4+8 = 16 marks)

3. **Write short notes on:**

3A. Occupational lung disease
3B. Hyponatremia
3C. Universal Precautions in the ICU
3D. Pre-Eclampsia
3E. Organophosphorous poisoning
3F. Respiratory Acidosis

(8 marks × 6 = 48 marks)

Reg. No.									

MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION – MAY/JUNE 2018

SUBJECT: CRITICAL CARE MEDICINE I

(SPECIALTY: NEONATAL AND PAEDIATRIC RESPIRATORY CARE)

(2013 SCHEME)

Tuesday, June 05, 2018

Time: 10:00 – 13:00 Hrs. Max. Marks: 80

✍ **Answer ALL the questions.**

1. Define Persistent pulmonary hypertension of the new-born (PPHN). List the types of PPHN. Discuss the management of PPHN.

(2+2+12 = 16 marks)

2. Discuss Ventilator Associated Pneumonia. Add a note on care of ventilator circuits to prevent Infection in the Neonates.

(8+8 = 16 marks)

3. **Write short notes on the following:**

3A. Tracheo-esophageal fistula

3B. Respiratory care in children with neuromuscular disease.

3C. Epiglottitis

3D. Risk factors for chronic lung disease (BPD) in neonates.

3E. Air leak syndrome

3F. List the types of Apnea of Prematurity. Explain its management briefly.

(8 marks × 6 = 48 marks)

Reg. No.										

MANIPAL ACADEMY OF HIGHER EDUCATION

FRIST YEAR MSC. RT / MOPT/MSc. ECG/MSc. CCIT/ MSc. NMT/ MSc. MLT/ MOT/ MSc. RRT & DT/ MASLP

SECOND SEMESTER M.Sc. MRP/MSc. EXERCISE AND SPORTS SCIENCE / M.Sc. MIT/ M.Sc. HIM/M.Sc. CLINICAL PSYCHOLOGY DEGREE EXAMINATION – MAY/JUNE 2018

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

Tuesday, May 29, 2018

Time: 10:00 – 13:00 Hrs. Max. Marks: 80

✍ **Answer ALL the questions.**

1A. Define mean, median, mode, standard deviation and coefficient of variation.

1B. What do you mean by simple random sampling? Explain lottery method in simple random sampling with the help of an example.

(5+5 = 10 marks)

2A. Write two examples of Poisson random variable. Enumerate the properties of Poisson distribution.

2B. Define sampling distribution, standard error and confidence interval. Write two applications of standard error in inferential statistics.

(5+5 = 10 marks)

3A. Briefly explain the steps involved in one way ANOVA.

3B. A research team wants to know the prevalence of anaemia among primary school going children in a rural area in southern India. A previous study conducted few years before in the same population showed that the prevalence of anaemia among primary school children was 15%. What is the minimum sample size required if absolute precision (margin of error) is 3% and confidence level of 95%?

(5+5 = 10 marks)

4. Explain the structure of a research thesis.

(10 marks)

5. A sample of 160 women between 75 and 80 years old were classified into one of two groups based on whether they took Vitamin E supplements at the time of enrolment. Each woman was subsequently given a test to measure cognitive ability. Higher scores on this test indicate better cognition. The average test score amongst 60 women taking vitamin E was 27 with standard

deviation of 6.9 as compared to a mean score of 24 with a standard deviation of 6.2 among 100 women not taking the supplements. The research team wants to know whether the mean scores differ significantly between the two groups.

i) Name the statistical test used for comparing the mean scores between the two groups.
ii) What are the assumptions for this test?
iii) State the null and alternate hypothesis for this test?
iv) Compute the test statistic for this test.
v) State whether the test is one sided or two sided test. Justify your answer.

(1+2+2+4+1 = 10 marks)

6. Explain the design, measure of strength of association, strength and weakness of cohort study design.

(10 marks)

7. **Write short notes on:**

7A. Wilcoxon signed rank test
7B. Cross sectional study design
7C. Logistic regression
7D. Validity of diagnostic tests

(5 marks × 4 = 20 marks)