Reg. No.										

MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD YEAR B.Sc. R.R.T. & D.T./ B.Sc. M.R.T/B.Sc. R.T./B.Sc. C.V.T
FOURTH YEAR B.O.T./B.P.T. DEGREE EXAMINATION – JUNE 2018

SUBJECT: BIOSTATISTICS & RESEARCH METHODOLOGY/RESEARCH METHODOLOGY & STATISTICS/BASIC BIOSTATISTICS & RESEARCH METHODOLOGY/RESEARCH METHODOLOGY AND BIOSTATISTICS / BIOSTATISTICS & RESEARCH METHODOLOGY

Friday, June 01, 2018

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

✍ **Answer ALL the questions.**

1. Define statistics and enumerate its applications in health sciences.

(5 marks)

2. Form a frequency table along with relative frequencies for the ages of 40 patients given below. (Class intervals: 0 – 15, 15 – 30, 30 – 45, so on)

57	37	43	43	30	39	53	47	64	31
40	22	40	29	15	65	39	43	54	40
24	46	17	38	50	30	34	25	36	39
36	62	30	07	47	32	36	42	42	47

(5 marks)

3. Define discrete and continuous variables with examples.

(4 marks)

4. **State true or false:**
4A. Mode may or may not exist.
4B. Standard normal curve is either leptokurtic or platykurtic.

(2 marks)

5. Construct a bar diagram for the following data on socioeconomic status of 120 HIV infected subjects.

Socioeconomic Status	No. of subjects
High	55
Middle	25
Low	40

(4 marks)

6. Erythrocyte Sedimentation Rate (ESR) readings (in mm) of 10 tuberculosis patients are given below. Calculate coefficient of variation.
    11 9 8 14 10 8 7 12 8 9

(10 marks)

7. Obtain median and interquartile range for the data regarding number of post operative days until diagnosis of infection for each subject experiencing an infection.
    7 4 15 8 16 14 8 9 12 11

(8 marks)

8. **Define the following:**

8A. Crude death rate

8B. Total fertility rate

8C. Maternal mortality rate

(2 marks × 3 = 6 marks)

9. Given the weight of new born babies is approximately normally distributed with a mean of 3000 gms and a standard deviation of 300 gms, obtain the proportion of new born babies with weight

9A. More than 3300 gms

9B. Between 3000 and 3600 gms

(3 marks × 2 = 6 marks)

10. **Write short notes on:**

10A. Scatter diagram

10B. Probability sampling

10C. Case series study

10D. Health information system

10E. Disease registries

10F. Scales of measurement

(5 marks × 6 = 30 marks)

MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD YEAR B.Sc. RRT & DT DEGREE EXAMINATION – JUNE 2018

SUBJECT: BDT 301 – ADVANCED HD, SPECIAL EXTRACORPOREAL TREATMENTS AND PATIENT EDUCATION

Monday, June 04, 2018

Time: 10.00-13.00 Hrs.   Max. Marks: 80

1. **Long essay questions:**

1A. Define plasmapheresis. Explain the types of plasmapheresis.

1B. Describe the principles of management of poisonings.

1C. Explain the standard measures recommended for prevention of hepatitis B transmission in the hemodialysis unit.

(10 marks × 3 = 30 marks)

2. **Short essay questions:**

2A. What are the specifications for the hemodialysis patient area?

2B. How will you monitor hemodialysis water quality?

2C. Discuss the psychological disorders seen in end stage renal disease (ESRD).

2D. Discuss anticoagulation in continuous renal replacement therapy (CRRT).

2E. Explain MARS – liver dialysis.

2F. List the dialysis modalities suitable for intensive care unit patients. Explain any one.

(5 marks × 6 = 30 marks)

3. **Short notes questions:**

3A. What is regional heparinisation?

3B. What is online hemodialfiltration (HDF)?

3C. How will you calculate the plasma volume for plasmapheresis?

3D. What is a high flux dialyzer?

3E. What are the disadvantages of albumin as a replacement fluid in plasmapheresis?

3F. Draw the circuit for isolated ultrafiltration.

3G. Why arteriovenous fistula is considered as best vascular access?

3H. Write any four reasons for extracorporeal circuit clotting.

3I. Write any two disadvantages of bicarbonate dialysate.

3J. What is SLED?

(2 marks × 10 = 20 marks)