

## MANIPAL UNIVERSITY

**THIRD YEAR B.Sc. R.R.T. & D.T./B.Sc. C.V.T./B.Sc. M.R.T/B.Sc. R.T./B.Sc. M.L.T./  
FOURTH YEAR B.O.T./B.P.T. DEGREE EXAMINATION – JUNE 2016**

**SUBJECT: BIostatISTICS & RESEARCH METHODOLOGY/RESEARCH  
METHODOLOGY & STATISTICS/BIostatISTICS/ BASIC BIostatISTICS &  
RESEARCH METHODOLOGY/RESEARCH METHODOLOGY AND BIostatISTICS**

Wednesday, June 01, 2016

Time: 10:00-13:00 Hrs.

Max. Marks: 80

✍ **Answer ALL the questions.**

1. Differentiate between nominal and ordinal variables with examples.

(4 marks)

2. **Classify the following into the four different scales of measurement:**

- 2A. Cell counts
- 2B. Blood group
- 2C. Pain score
- 2D. IQ

(4 marks)

3. **State true or false:**

- 3A. Pearson's correlation coefficient always takes values  $\geq 0$
- 3B. Incidence is not affected by the duration of disease
- 3C. Convenience sampling is a procedure that assures that each element in the population have equal chance of being included in the sample
- 3D. Health information system is sample based

(4 marks)

4. At rest pulse rates for 22 athletes at a meet are

68 60 78 70 63 68 66 57 74 65 57  
66 73 67 68 56 74 64 67 77 72 64

- 4A. Compute mean, median and range of this data
- 4B. Construct a frequency distribution table along with relative frequencies for this data using class intervals 55 – 60, 60 – 65, 65 – 70 and so on.
- 4C. Draw a frequency polygon for the frequency table constructed above.

(6+5+4 = 15 marks)

5. Obtain interquartile range for the data regarding number of dental caries in twelve children less than ten years of age.

6 0 2 1 0 4 6 0 4 2 8 3

(8 marks)

6. Define coefficient of variation. Mean and standard deviation of pulse rate for a group of individuals is 76 and 3 beats per minute respectively. The mean and standard deviation of height is 64 and 2 inches respectively. Which of the two characteristics is more consistent?

(5 marks)

7. **Define the following:**

7A. Case fatality rate

7B. Total fertility rate

7C. Crude death rate

(2 marks  $\times$  3 = 6 marks)

8. The amount of weight gained during pregnancy was assessed and was found to be approximately normally distributed with a mean weight gain of 10 kgs and a standard deviation of 3kgs. Calculate the proportion of pregnant women who gained weight.

8A. At most 16 kgs

8B. Between 10 to 13 kgs

8C. At least 7 kgs

(3 marks  $\times$  3 = 9 marks)

9. **Write short notes on:**

9A. Inter rater reliability

9B. Descriptive epidemiology

9C. Systematic sampling

9D. Sample registration system

9E. Components of health information system

(5 marks  $\times$  5 = 25 marks)



## MANIPAL UNIVERSITY

### THIRD YEAR B.Sc. RRT & DT DEGREE EXAMINATION – JUNE 2016

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

Friday, June 03, 2016

Time: 10.00-13.00 Hrs.

Max. Marks: 80

1. **Long essay questions:**

- 1A. Discuss the indications and complications of Plasmapheresis.
- 1B. Describe continuous venovenous hemodiafiltration (CVVHDF).
- 1C. Discuss how extracorporeal therapies are used in poisoning.

(10 marks × 3 = 30 marks)

2. **Short essay questions:**

- 2A. What are the specifications for the hemodialysis patient area?
- 2B. Discuss daily hemodialysis.
- 2C. Discuss the role of counselling in end stage renal disease (ESRD).
- 2D. What is albumin dialysis?
- 2E. Discuss the complications of the continuous renal replacement therapy (CRRT) procedure.
- 2F. How can Hepatitis C transmission in the hemodialysis unit be minimized?

(5 marks × 6 = 30 marks)

3. **Short notes questions:**

- 3A. Write a note on nocturnal hemodialysis.
- 3B. What is sustained low efficiency dialysis (SLED)?
- 3C. What are the side effects of citrate anticoagulation?
- 3D. What are the disadvantages of acute peritoneal dialysis?
- 3E. Write a prescription for continuous venovenous hemofiltration (CVVHF) for a 70kg man with acute kidney injury –failure (AKI-F) with fluid overload.
- 3F. How is plasma volume calculated for plasmapheresis?
- 3G. Mention two complications of hemadsorption
- 3H. What is meant by universal precautions?
- 3I. Name the common psychological disorders seen in end stage renal disease patients.
- 3J. What is regional heparinisation?

(2 marks × 10 = 20 marks)

