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 ≥ 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 × 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 × 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 × 5 = 25 marks)

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THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: PAPER I – ECHOCARDIOGRAPHY
(COMMON FOR OR & 2011 SCHEME)

Friday, June 03, 2016

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

✍   **Answer ALL the questions.**

✍   **Draw the diagram wherever necessary.**

1.   Define LV ejection. Explain various methods of evaluation of LV systolic function in detail.

(20 marks)

2.   Explain etiology of aortic regurgitation and severity assessment in detail.

(20 marks)

3.   **Write short note on:**

3A.   Echo reverberation

3B.   LA myxoma

3C.   Central venous pressure assessment

3D.   Endocardial cushion defect

3E.   Restrictive cardiomyopathy

(8 marks × 5 = 40 marks)

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THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: PAPER II – CARDIAC CATH AND INTERVENTION/ CARDIAC CATHETERISATION AND INTERVENTION
(COMMON FOR OR & 2011 SCHEME)

Monday, June 06, 2016

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

✍ **Answer ALL the questions.**

✍ **Draw the diagram wherever necessary.**

1. Explain cardiac catheterization, angiography and Intervention in PDA.

(20 marks)

2. Explain angio in HOCM. Define alcohol septal ablation procedure, complications in detail.

(20 marks)

3. **Write short note on:**

3A. Cardiac output measurement

3B. Peripheral stenting

3C. LMCA stenting

3D. Slow flow/no flow phenomenon

3E. Coronary balloons

(8 marks × 5 = 40 marks)

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THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: PAPER III – CLINICAL CARDIOLOGY
(COMMON FOR OR & 2011 SCHEME)

Wednesday, June 08, 2016

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

✍   **Answer ALL the questions.**

✍   **Draw the diagram wherever necessary.**

1.   Enumerate causes of continuous murmur, clinical features and treatment of PDA.

                                                            (20 marks)

2.   Differentiation of restrictive cardiomyopathy from constrictive pericarditis.

                                                            (20 marks)

3.   **Write short notes on:**

3A.   Taussig bing anomaly

3B.   Bio-Prosthetic valve

3C.   X-ray in RAE/LAE

3D.   Pulsus alternans and Bisference

3E.   Infective endocarditis

                                         (8 marks × 5 = 40 marks)