

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. C.V.T. DEGREE EXAMINATION – JUNE 2018

SUBJECT: PAPER I – ECHOCARDIOGRAPHY
(COMMON FOR 2015 & 2011 SCHEME)

Tuesday, June 05, 2018

Time: 10:00-13:00 Hrs.

Max. Marks: 80

- ✍ **Answer ALL the questions.**
✍ **Draw the diagram wherever necessary.**

1A. Define various methods of RV function assessment.

1B. Echocardiography in Mitral stenosis.

(20 marks)

2. Explain severity assessment of Aortic stenosis in normal LV function and low flow/low gradient condition.

(20 marks)

3. **Write short notes on:**

3A. Echo in Endocardial Cushion Defect

3B. Dilated Cardiomyopathy

3C. Constrictive Pericarditis

3D. Mitral regurgitation severity assessment

3E. Proximal Isovelocity Surface area (PISA)

(8 marks × 5 = 40 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – JUNE 2018
SUBJECT: PAPER II – CARDIAC CATHETERISATION AND INTERVENTION
(COMMON FOR 2015 & 2011 SCHEME)

Thursday, June 07, 2018

Time: 10:00-13:00 Hrs.

Max. Marks: 80

- ✍ **Answer ALL the questions.**
- ✍ **Draw the diagram wherever necessary.**

1. Explain cath, angiography, valve area assessment and Intervention in Mitral stenosis.
(20 marks)

2. Explain cath, angio and Intervention in Co-arctation of Aorta.
(20 marks)

3. **Write short notes:**
 - 3A. Cath in Tetralogy of Fallot
 - 3B. Primary angioplasty
 - 3C. Intra vascular ultrasound
 - 3D. Renal stenting
 - 3E. Stent Thrombosis

(8 marks × 5 = 40 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION
THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – JUNE 2018
SUBJECT: PAPER III – CLINICAL CARDIOLOGY
(COMMON FOR 2015 & 2011 SCHEME)

Saturday, June 09, 2018

Time: 10:00-13:00 Hrs.

Max. Marks: 80

- ✍ **Answer ALL the questions.**
✍ **Draw the diagram wherever necessary.**

1. Explain clinical features, etiology, X-ray, ECG and treatment of Aortic regurgitation.
(20 marks)
2. Enumerate causes of continuous murmur and clinical features and treatment of PDA.
(20 marks)
3. **Write short notes on:**
 - 3A. Constrictive pericarditis
 - 3B. Pulsus bigeminy and normal pulse
 - 3C. Second Heart sound
 - 3D. Pericardial knock
 - 3E. Hypertrophic Cardiomyopathy

(8 marks × 5 = 40 marks)

