

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 2017**

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

Thursday, June 01, 2017

Time: 10:00-13:00 Hrs.

Max. Marks: 80

☞ **Answer ALL the questions.**

1. List and define different types of variables. (6 marks)

2. **Classify the following into the four different scales of measurement:**
 - 2A. Stages of cancer
 - 2B. Blood group
 - 2C. Pain score (mild/moderate/sever)
 - 2D. Age(4 marks)

3. Thirty seven persons were examined for haemoglobin level in their blood (mg per dl). Construct a frequency polygon for the data.

Hb (mg/dl)	11 - 12	12 - 13	13 - 14	14 - 15	15 - 16	16 - 17
No. of persons	5	10	15	4	2	1

(4 marks)

4. Compute 65th percentile and standard deviation for the following data regarding weight of infants (in kg.).

2.32	2.36	2.89	3.03	3.86	2.90	4.01	3.69	3.07	2.87
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(10 marks)

5. Data below shows the number of colonies of bacteria grown on ten agar plates. Calculate median and interquartile range.

60	70	100	160	140	80	110	95	130	115
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(10 marks)

6. **Define the following:**
 - 6A. Perinatal mortality rate
 - 6B. Crude birth rate(2+2 = 4 marks)

7. Describe correlation using scatter plots. (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 12 kgs and a standard deviation of 4 kgs. Calculate the proportion of pregnant mothers who gained weight:

- 8A. Less than 20 kgs
- 8B. Between 12 to 16 kgs
- 8C. At least 8 kgs

(2 marks \times 3 = 6 marks)

9. **Write short notes on:**

- 9A. Reliability
- 9B. Epidemiology and its aims
- 9C. Systematic sampling
- 9D. Characteristics of good hypothesis
- 9E. Disease Registries
- 9F. Case reports

(5 marks \times 6 = 30 marks)



MANIPAL UNIVERSITY**THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – JUNE 2017****SUBJECT: PAPER I – ECHOCARDIOGRAPHY
(COMMON FOR OR & 2011 SCHEME)**

Saturday, June 03, 2017

Time: 10:00-13:00 Hrs.

Max. Marks: 80

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

1. Explain the various methods to assess diastolic function and dysfunction of Left ventricle in detail.

(20 marks)

2. Explain etiology of Aortic regurgitation and severity assessment by various methods.

(20 marks)

3. **Write short notes on:**

- 3A. Echo in Endocardial cushion defect
3B. Echo in Ischemic heart disease
3C. Infective endocarditis
3D. Prosthetic aortic valve function assessment
3E. Echo in Hypertrophic cardiomyopathy

(8 marks × 5 = 40 marks)



Reg. No.

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THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – JUNE 2017

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

Tuesday, June 06, 2017

Time: 10:00-13:00 Hrs.

Max. Marks: 80

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

1. Describe primary/rescue coronary angioplasty-indication and procedure.
(20 marks)
2. Describe in details intra cardiac shunt calculation and vascular resistance by cath.
(20 marks)
3. **Write short note on:**
 - 3A. ASD device closure
 - 3B. Fractional flow reserve
 - 3C. Balloon mitral valvuloplasty
 - 3D. VDDR pacemakers
 - 3E. Pericardiocentesis

(8 marks × 5 = 40 marks)



MANIPAL UNIVERSITY**THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – JUNE 2017****SUBJECT: PAPER III – CLINICAL CARDIOLOGY
(COMMON FOR OR & 2011 SCHEME)**

Thursday, June 08, 2017

Time: 10:00-13:00 Hrs.

Max. Marks: 80

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

1. Explain clinical features, X-ray, ECG and treatment of Mitral stenosis. (20 marks)
2. Explain clinical features, ECG, X-ray and management of DCM. (20 marks)
3. **Write short notes on:**
 - 3A. Angina
 - 3B. Non-compaction LV cardiomyopathy
 - 3C. X-ray in Pulmonary venous hypertension
 - 3D. Pericarditis
 - 3E. Anomalous origin of LCA from Pulmonary artery (ALCAPA)(8 marks × 5 = 40 marks)

