| Reg. No. | | | | | | | | | | |
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# MANIPAL UNIVERSITY

## THIRD YEAR BASLP/B.Sc. M.L.T./B.Sc. C.V.T./B.Sc. M.R.T
## DEGREE EXAMINATION – DECEMBER 2014

**SUBJECT: BASIC STATISTICS & SCIENTIFIC ENQUIRY IN AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY (NR)/BIOSTATISTICS (NR)/BIOSTATISTICS AND RESEARCH METHODOLOGY (2011 SCHEME)/(OLD REGULATION)**

Wednesday, December 17, 2014

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

1.   Describe the steps involved in a research process.

(5 marks)

2.   What are the characteristics of a good hypothesis?

(5 marks)

3.   List out the differences between discrete and continuous variables with examples.

(5 marks)

4.   Classify the following into different scales of measurements (Nominal, Ordinal, Interval and Ratio)

a)   Name                b)   Age                c)   Intelligence Quotient (IQ)
d)   Marital status       e)   Pain score

(5 marks)

5.   Define and distinguish probability and non-probability sampling.

(5 marks)

6A.  The following table shows tuberculin reaction measured in 206 persons who were never vaccinated. Present the data graphically by a histogram.

| Reaction in mm | Number of persons |
|---|---|
| 8 – 10 | 24 |
| 10 – 12 | 52 |
| 12 – 14 | 42 |
| 14 – 16 | 48 |
| 16 – 18 | 12 |
| 18 – 20 | 08 |
| 20 – 22 | 14 |
| 22 – 24 | 06 |

6B. The data gives the number of hours 45 hospital patients slept following the administration of a certain anesthetic. Construct frequency table taking class intervals $0 - 4$, $4 - 8$, $8 - 12$, etc.

| 10 | 4 | 12 | 1 | 13 | 11 | 3 | 8 | 1 |
|----|---|----|---|----|----|----|----|----|
| 11 | 8 | 3 | 7 | 7 | 1 | 17 | 10 | 4 |
| 8 | 5 | 7 | 7 | 3 | 10 | 12 | 4 | 8 |
| 2 | 3 | 4 | 7 | 3 | 5 | 5 | 8 | 7 |
| 5 | 5 | 8 | 3 | 4 | 13 | 1 | 7 | 17 |

(5+5 = 10 marks)

7A. Calculate median and standard deviation of the following data:
Hb level (in gm%):     15     12     11     13     10     13     14     12     13     17

7B. 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 has lesser variability?

(5+5 = 10 marks)

8. A study on fasting blood glucose levels of patients reported a mean glucose level of 148mg/dl and a standard deviation of 11 mg/dl. Assuming normal distribution, what is the probability that any given individual will have blood glucose level,

8A. Between 126 and 159 mg/dl

8B. Less than 181 mg/dl

(5 marks)

9. With the help of scatter diagram, explain correlation.

(5 marks)

10. Define health information system. List its uses.

(5 marks)

11A. Explain the terms rate and ratio with examples.

11B. During the year 2010, there were 550 deaths in a town. The estimated mid-year population for 2010 for the town was 27500. Calculate the crude death rate.

(5+5 = 10 marks)

12. What do you mean by cross sectional studies? What are its uses? List the aims of epidemiology.

(10 marks)

1. Describe the steps involved in a research process.

(5 marks)

2. What are the characteristics of a good hypothesis?

(5 marks)

3. List out the differences between discrete and continuous variables with examples.

(5 marks)

4. Classify the following into different scales of measurements (Nominal, Ordinal, Interval and Ratio)

   a) Name        b) Age        c) Intelligence Quotient (IQ)
   d) Marital status    e) Pain score

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| 20 – 22 | 14 |
| 22 – 24 | 06 |

6B. The data gives the number of hours 45 hospital patients slept following the administration of a certain anesthetic. Construct frequency table taking class intervals 0 – 4, 4 – 8, 8 – 12, etc.

| | | | | | | | | |
|----|---|----|---|----|----|----|----|----|
| 10 | 4 | 12 | 1 | 13 | 11 | 3  | 8  | 1  |
| 11 | 8 | 3  | 7 | 7  | 1  | 17 | 10 | 4  |
| 8  | 5 | 7  | 7 | 3  | 10 | 12 | 4  | 8  |
| 2  | 3 | 4  | 7 | 3  | 5  | 5  | 8  | 7  |
| 5  | 5 | 8  | 3 | 4  | 13 | 1  | 7  | 17 |

(5+5 = 10 marks)

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(5+5 = 10 marks)

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(10 marks)

# MANIPAL UNIVERSITY

## THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – DECEMBER 2014

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

Thursday, December 18, 2014

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

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- ✍ **Answer ALL the questions.**

- ✍ **Draw the diagrams wherever necessary.**

1.  Explain the various methods to assessment of diastolic function and dysfunction of left ventricle.

    (20 marks)

2.  How do you assess severity of Mitral regurgitation by various methods?

    (20 marks)

3.  **Write short notes on:**

3A.  Pressure half time

3B.  Echo in Ebstein's anomaly

3C.  Cardiac Tamponade

3D.  Prosthetic aortic valve assessment

3E.  Cardiac strain and strain rate

    (8 marks × 5 = 40 marks)

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# MANIPAL UNIVERSITY

## THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – DECEMBER 2014

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

Friday, December 19, 2014

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

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✍  **Answer ALL the questions.**

✍  **Label the diagram wherever necessary.**

1.  Describe the cardiac catheterization, angiography findings and non surgical intervention in Ventricular septal Defect.

(20 marks)

2.  Explain the methods of Cardiac output measurement by cardiac catheterization.

(20 marks)

3.  **Write short notes on:**

3A.  Renal artery stenting

3B.  Distal protection Device

3C.  Balloon Aortic Valvuloplasty

3D.  Puncture site complications

3E.  Right Heart Catheters

(8 marks × 5 = 40 marks)

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# MANIPAL UNIVERSITY

## THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – DECEMBER 2014

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

Saturday, December 20, 2014

Time: 10:00-13:00 Hrs.

Max. Marks: 80

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- ✍ Answer ALL the questions.
- ✍ Label the diagram wherever necessary.

1. Explain Normal mitral valve anatomy and etiology aspects of Mitral regurgitation.

(20 marks)

2. Approach to diagnosis of Cyanotic congenital Heart Disease.

(20 marks)

3. Write short notes on:

3A. Cardiomegaly in Chest X-ray

3B. Define JVP with respect to measurement wave forms and variation in various disease conditions

3C. Choussat's criteria for Univentricular repair

3D. Hypertrophic Obstructive Cardiomyopathy

3E. Rheumatic Heart Disease

(8 marks × 5 = 40 marks)

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