

MANIPAL UNIVERSITY

THIRD YEAR B. Sc. C.V.T. DEGREE EXAMINATION – DECEMBER 2011

SUBJECT: BIostatistics & RESEARCH METHODOLOGY

Monday, December 12, 2011

Time: 10:00-13:00 Hrs.

Max. Marks: 80

1. Why is research important? (5 marks)
2. Explain the concepts of validity and reliability. (5 marks)
3. What are qualitative variables? Explain with examples. (5 marks)
4. Classify the following into different scales of measurements (Nominal, Ordinal, Interval and Ratio)
 - a) Name b) Age c) Pincode d) Ph value e) Pain score(5 marks)
5. Write a note on convenience sampling. (5 marks)

- 6A. Construct a histogram for the following data regarding Serum cholesterol (mmol/L) levels measured on a sample of 90 stroke patients:

Interval	Frequency
3.0 - 4.0	3
4.0 - 5.0	12
5.0 - 6.0	22
6.0 - 7.0	25
7.0 - 8.0	19
8.0 - 9.0	6
9.0 - 10.0	2
10.0 - 11.0	1

- 6B. Form a frequency table along with relative frequencies for the ages of 48 patients given below. (Class intervals: 0 – 15, 15 – 30, 30 – 45, so on)

47	33	46	17	38	10	36	29	40	22	40	65
32	36	42	76	50	30	34	25	36	39	36	42
15	30	39	53	47	64	31	07	39	43	62	30
32	39	24	57	37	47	27	43	43	54	40	39

(5+5 = 10 marks)

7. The following data gives the pulse rate recorded per minute for 12 subjects. Calculate mean, median, standard deviation and inter-quartile range.
70 86 73 72 86 75 79 81 86 78 87 72
(10 marks)
8. It is observed that the average length of hospital stay of patients after a particular surgery is 10 days with a standard deviation of 3 days. If the length of stay is normally distributed, find the probability that a randomly selected patient from this group will have length of stay
i) Less than 7 days
ii) More than 19 days
(5 marks)
9. Give the formula for the computation of correlation coefficient. List out the properties of correlation coefficient.
(5 marks)
10. Define health information system. Enumerate its uses.
(5 marks)
11. The estimated mid-year population for a city in the year 2010 was 276543. During the year, the total new cases of malaria reported from this city were 432 and the total cases of malaria reported during the year were 1587. Calculate the incidence rate and period prevalence rate for malaria in the year 2010.
(10 marks)
12. Describe case series and cross sectional study designs.
(10 marks)



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THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – DECEMBER 2011

SUBJECT: PAPER I - ECHOCARDIOGRAPHY

Tuesday, December 13, 2011

Time: 10:00-13:00 Hrs.

Max. Marks: 80

Answer ALL the Questions. Label the diagram wherever necessary.

1. How do you evaluate Ventricular systolic function by Echocardiography?

(20 marks)

2. Explain the role of Echocardiography in diagnosis and management of Ventricular Septal Defect.

(20 marks)

3. Short Notes:

3A. Speckle tracking

3B. Echo in pulmonary artery pressure analysis

3C. Tie index

3D. Echo in Restrictive Cardiomyopathy

3E. How do you assess the severity of Aortic Regurgitation by Echo?

(8×5 = 40 marks)



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THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – DECEMBER 2011

SUBJECT: PAPER II – CARDIAC CATH AND INTERVENTION

Wednesday, December 14, 2011

Time: 10:00-13:00 Hrs.

Max. Marks: 80

Answer ALL the questions. Label the diagram wherever necessary.

1. Describe the cardiac catheterization, angiography findings and Interventions in Co-arctation of Aorta.

(20 marks)

2. How do you quantify shunt quantity and Vascular Resistance in cath lab?

(20 marks)

3. Write short notes on:

3A. Balloon Pulmonary valvuloplasty

3B. Pressure wave forms of cardiac chambers and major arteries

3C. Impellar device

3D. Femoral puncture site Hematoma

3E. No reflow phenomenon

(8×5 = 40 marks)



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THIRD YEAR B.Sc. C.V.T. DEGREE EXAMINATION – DECEMBER 2011

SUBJECT: PAPER III – CLINICAL CARDIOLOGY

Thursday, December 15, 2011

Time: 10:00-13:00 Hrs.

Max. Marks: 80

Answer ALL the questions. Label the diagram wherever necessary.

1. Explain cardiac tumors and write about atrial Myxoma in detail.
(20 marks)

2. Describe the diagnostic modalities and treatment aspect of Tricuspid Atresia.
(20 marks)

3. **Write short notes on:**
 - 3A. Dilated Cardiomyopathy
 - 3B. Bio-prosthetic valves
 - 3C. Antiplatelet agents
 - 3D. Pulsus alternans
 - 3E. Parasternal Heave

(8×5 = 40 marks)

