MANIPAL UNIVERSITY

FIRST YEAR M.O.T./ M.A.S.L.P./ M.Sc. M.L.T./ M.Sc. R.T/ M.Sc. Opt./ M.Sc. M.I.T.
SECOND YEAR M.Sc. CVT/ SECOND SEMESTER M.Sc. RADIATION PHYSICS/ M.Sc. H.H.I.A
DEGREE EXAMINATION – JUNE 2011
SUBJECT: EPIDEMIOLOGY AND BIOSTATISTICS

Tuesday, June 07, 2011

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

✍   **Answer ALL the questions.**

1. Explain the structure of a research protocol.

(10 marks)

2. Discuss with examples:

2A. Qualitative and quantitative variables.

2B. Quota sampling and snowball sampling.

(5+5 = 10 marks)

3. Eight diabetic patients had plasma glucose levels (mmol/l) measured before and one hour after oral administration of 100 g glucose. The objective of the study is to see whether there is any change in the plasma glucose levels before and after oral administration of 100 g glucose. The results are summarized in the table below.

Patient number		1	2	3	4	5	6	7	8
Plasma glucose (mmol/l)	Before	4.7	4.9	5.1	5.2	5.3	6.2	6.5	7.0
	After	5.4	10.1	8.5	6.6	10.7	5.7	5.8	9.9

3A. Write the null and alternate hypothesis for the above study.

3B. What is the degrees of freedom for this problem?

3C. Write the formula of test statistic for the above study.

3D. Suppose a clinical trial is conducted to test the efficacy of a new drug, spectinomycin, in the treatment of gonorrhoea for females. Fifty-five patients are given a 4 gram daily dose of the drug and are seen one week later, at which time 35 of the patients were free from gonorrhoea. Calculate 95% confidence interval for proportion of patients free from gonorrhoea.

(2+1+2+5 = 10 marks)

4A. Define the two types of errors in tests of significance. Also define level of significance, power and p value.

4B. Explain Chi square test.

(5+5 = 10 marks)

5A. What do you mean by randomization? Explain different methods of randomization in clinical trials.

5B. A study was conducted to find the relationship between obesity and non-insulin dependent diabetes. For this study 5000 subjects all free of diabetes were selected and their obesity was measured. Among the 5000 subjects, 2110 were observed to be obese and 2890 non obese subjects. After 10 years of follow-up, the number of diabetes cases identified was 255 and 170 in obese and non obese group respectively. Create a 2×2 table for the above study. Find the appropriate effect measure and interpret it.

(10+5 = 15 marks)

6. **Write short notes on:**

6A. Poisson distribution

6B. Mann Whitney U test

6C. Multiple linear regression

6D. Logistic regression

6E. Validity of diagnostic tests

(5×5 = 25 marks)

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SECOND YEAR M.Sc. CVT DEGREE EXAMINATION – JUNE 2011

SUBJECT: PAPER – I: BASIC AND DIAGNOSTIC CARDIOLOGY

Thursday, June 09, 2011

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

✍   **Answer ALL questions.**

✍   **Draw the diagrams wherever necessary.**

1.   Echocardiographic assessment of Mitral Regurgitation.

                                                                (20 marks)

2.   Describe clinical features, investigation and treatment of TAPVC.

                                                                (20 marks)

3.   **Write short notes on:**

3A.   Non CAD indications for TMT

3B.   Echocardiogram in TOF

3C.   Echocardiographic features of Cardiac Tamponade

3D.   Holter monitoring

                                                                (40 marks)

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✍ **Answer ALL questions.**

✍ **Draw the diagrams wherever necessary.**

1. Explain the catherization in mitral stenosis, describe the steps in BMV.

(20 marks)

2. Describe the steps of coronary angioplasty, write a short notes on coronary stents.

(20 marks)

3. **Write short notes on:**

3A. Pacemaker pocket and its complications.

3B. Carotid stenting.

3C. Catherization in aortic regurgitation.

3D. Catherization in RCM.

(40 marks)

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SECOND YEAR M.Sc. CVT DEGREE EXAMINATION – JUNE 2011

SUBJECT: CURRENT CARDIOLOGY

Monday, June 13, 2011

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

✍ **Answer ALL questions.**

✍ **Draw the diagrams wherever necessary.**

1. Explain in detail cardiac assist devices.

(20 marks)

2. Explains the methods of assessment, indication and steps of closure of PFO.

(20 marks)

3. **Write short notes on:**

3A. IVC filter

3B. Mechanical heart valves

3C. Stent thrombosis

3D. Thrombolytics

(40 marks)