MANIPAL UNIVERSITY

FIRST YEAR M.Sc. ECHOCARDIOGRAPHY DEGREE EXAMINATION – MAY/JUNE 2013

SUBJECT: PAPER IV: EPIDEMIOLOGY & BIOSTATISTICS

(COMMON FOR 2 & 3 YEARS COURSE)

Tuesday, May 28, 2013

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

✎ **Answer all questions.**

1.   Define the following:

1A. Alternate hypothesis

1B. Type II error

1C. P- value

1D. Level of significance

1E. Parameter

(1×5 = 5 marks)

2A. Define various measures of central tendency and write the situations where each one is appropriate.

2B. Explain the method of systematic sampling and state its merits and demerits.

(5+5 = 10 marks)

3A. A researcher identified coronary risk factors among men and women in a long term health care facility. Of the 250 male subjects, 62 had hypertension. Of the 1100 female subjects, 265 had hypertension. Construct 95% confidence interval for difference in proportions of hypertension between male and females and interpret it.

3B. A sample of 500 students participated in a study to evaluate the level of their knowledge of risk factors for a certain group of diseases and the result is given below:

Course	Knowledge of risk factors		
	Good	Poor	Total
Paramedical	72	50	122
Engineering	58	320	378
Total	130	370	500

Do these data suggest that there is an association between knowledge of risk factors for the group of disease and major field of study from which the present sample is drawn? (Let $\alpha=0.05$, Chi square for 1 degree of freedom= 3.84).

(5+5 = 10 marks)

4A. Explain the design, conduct and analysis of cohort study.

4B. A group of 5000 men with the habit of chewing tobacco and another group of 8000 men without the habit were followed up for a specified length of time, to assess the association between tobacco chewing and oral cancer. At the end of follow up 45 cases were observed among the chewing group and 22 cases among non-chewers group. Construct a 2×2 table for this information. Obtain the strength of association between tobacco chewing habits and oral cancer. Interpret the findings.

(10+5 = 15 marks)

5A. Discuss about materials and methods in a research report.

5B. Briefly explain the multivariate technique used for the analysis of time-to event data.

(5+5 = 10 marks)

6. **Write short notes on:**

6A. Sample size determination for estimation of mean

6B. Wilcoxon signed rank test

6C. Analysis of Variance

6D. Regression

6E. Systematic reviews

6F. Binomial distribution

(5×6 = 30 marks)

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FIRST YEAR M.Sc. ECHOCARDIOGRAPHY DEGREE EXAMINATION – MAY/JUNE 2013

SUBJECT: PAPER I: EMBRYOLOGY & ULTRASOUND PHYSICS
(COMMON FOR 2 & 3 YEARS COURSE)

Thursday, May 30, 2013

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

✍ **Answer all the questions. Draw the diagram wherever necessary.**

1. Explain development of ventricles and coronaries in Embryo.

(20 marks)

2. Explain different types of Transducers, Applications and limitations.

(20 marks)

3. **Short notes questions:**

3A. Transducer arrays.

3B. Pressure Half time.

3C. Proximal Isovelocity Surface area (PISA).

3D. Contrast Echo.

3E. Functions of Placenta.

(8×5 = 40 marks)

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FIRST YEAR M.Sc. ECHOCARDIOGRAPHY DEGREE EXAMINATION – MAY/JUNE 2013

SUBJECT: PAPER II: CLINICAL CARDIOLOGY
(2 YEARS COURSE)

Saturday, June 01, 2013

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

✍ **Answer all the questions. Draw the diagram wherever necessary.**

1. Define clinical features, ECG, X-ray and treatment of Mitral stenosis.

                                                                (20 marks)

2. Enumerate cardiac tumors. Explain Myxoma features in detail.

                                                                (20 marks)

3. **Short notes questions:**

3A. Infective endocarditis.

3B. Explain the types of prosthetic valves.

3C. Mitral valve prolapse.

3D. Angina.

3E.   Continuous murmur.

                                                        (8×5 = 40 marks)

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FIRST YEAR M.Sc. ECHOCARDIOGRAPHY DEGREE EXAMINATION – MAY/JUNE 2013
SUBJECT: PAPER III: ECHOCARDIOGRAPHY FOR ISCHEMIC/VALVULAR HEART DISEASE
(2 YEARS COURSE)
Monday, June 03, 2013

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

✍ **Answer all the questions. Draw the diagram wherever necessary.**

1.   Explain in detail the methods of Prosthetic valve function assessment.

(20 marks)

2.   Define various methods of RV function assessment.

(20 marks)

3.   **Short notes questions:**

3A.   Ischemic Mitral regurgitation.

3B.   Wilkins scoring.

3C.   LA function assessment.

3D.   Various methods of LVEDP assessment.

3E.   Papillary muscle dysfunction.

(8×5 = 40 marks)