

MANIPAL UNIVERSITY

FRIST YEAR MASLP / MOT / MSc. MLT / MSc. RT / MSc. ECHOCARDIOGRAPHY / MSc. CARDIAC CATHETERIZATION & INTERVENTIONAL TECHNOLOGY / OPTOMETRY / MSc. MIT / MSc. RRT & DT / DEGREE EXAMINATION – JUNE 2016

SUBJECT: STATISTICS & RESEARCH METHODS / ADVANCED BIOSTATISTICS & RESEARCH METHODOLOGY / BIOSTATISTICS / ADVANCED BIOSTATISTICS & RESEARCH METHODOLOGY / PAPER IV: EPIDEMIOLOGY & BIOSTATISTICS / PAPER IV: EPIDEMIOLOGY & BIOSTATISTICS / PAPER IV: RESEARCH METHODOLOGY & BIOSTATISTICS / BIOSTATISTICS/ ADVANCED BIOSTATISTICS & RESEARCH METHODOLOGY

Thursday, June 02, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

Answer ALL the questions.

- 1A. Explain the situation for use and computation procedure of mean and median.
 1B. What is cluster sampling? Explain the procedure with example. List the advantages and disadvantages of this technique. (5+5 = 10 marks)
- 2A. Suppose the ages at time of onset of a certain disease are approximately normally distributed with a mean of 12 years and a standard deviation of 3 years. A child has just come down with the disease. What is the probability that the child is:
 i) Between the ages of 9 and 12 years?
 ii) Over 15 years?
 2B. Write a short note on Poisson distribution. (5+5 = 10 marks)
- 3A. Define the following terms:
 i) Power of a test
 ii) P-value
 iii) Type one and type two errors in testing of hypothesis
 3B. Describe with example the situation in which you would use independent sample t-test. What is the null hypothesis tested? List the assumptions. ((1+2+2) +5 = 10 marks)
- 4A. Differentiate parametric and non-parametric tests. Explain the situation for Kruskal-Wallis test.
 4B. Write a short note on the application of Chi-square test. (5+5 = 10 marks)
- 5A. A hospital administrator wishes to know what proportion of discharged patients is unhappy with the care received during hospitalization. How large a sample should be drawn if we let the error margin $d = 0.1$, the confidence coefficient is 0.95, and the anticipated percentage of unhappy patients is 30? (Given $Z_{1-\alpha/2} = 1.96$).
 5B. Write a short note on Logistic Regression. (5+5 = 10 marks)

6. Discuss Cohort study under:

6A. Basic design

6B. Basic features

6C. Basic steps

6D. Merits and demerits

(10 marks)

7. Explain the structure of a scientific research paper.

(10 marks)

8. Write short notes on the following:

8A. Randomized controlled trials

8B. Sensitivity and specificity of a diagnostic test

(5+5 = 10 marks)



MANIPAL UNIVERSITY**FIRST YEAR M.Sc. ECHOCARDIOGRAPHY DEGREE EXAMINATION – JUNE 2016****SUBJECT: PAPER I: EMBRYOLOGY & ULTRASOUND PHYSICS
(2014 SCHEME)**

Saturday, June 04, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

✍ **Answer ALL the questions.**

✍ **Draw the diagram wherever necessary.**

1. Explain Coronary artery development in Embryo and congenital coronary anomalies. (20 marks)

2. Explain the relation between various types of transducers, its surface area, frequency and dispersion. Also define TEE. (20 marks)

3. **Short notes questions:**

3A. Development of Left atrium

3B. Resolution aspects of Ultrasound

3C. Doppler effect

3D. Haploid and Diploid Chromosomes

3E. Mitosis cell division

(8 marks × 5 = 40 marks)



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FIRST YEAR M.Sc. CARDIAC CATHETERIZATION AND INTERVENTIONAL TECHNOLOGY DEGREE EXAMINATION – JUNE 2016

SUBJECT: PAPER I: BASICS IN INTERVENTION
(2014 SCHEME)

Saturday, June 04, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

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

1. Explain nosocomial infections in detail.

(20 marks)

2. Write radiation hazards in detail. Also mention radiation protective measure briefly.

(20 marks)

3. Write short note on:

3A. Flat panel detectors

3B. CAG complications

3C. Trans-septal puncture

3D. Right heart catheters

3E. Coronary artery views

(8 marks × 5 = 40 marks)



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FIRST YEAR M.Sc. CARDIAC CATHETERIZATION AND INTERVENTIONAL TECHNOLOGY DEGREE EXAMINATION – JUNE 2016

SUBJECT: PAPER II: ELECTROPHYSIOLOGY AND CARDIAC PACEMAKERS

Tuesday, June 07, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

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

1. Enumerate the various causes of syncope. Explain diagnostic basis and evaluation of patients with cardio-vascular syncope briefly.

(20 marks)

2. Explain the basic components of cardiac pacemakers and its classification briefly.

(20 marks)

3. **Write short note on:**

3A. Anti-arrhythmic drugs classification

3B. 3D mapping system in EP study

3C. DC cardioversion

3D. X-ray in cardiac chamber enlargement

3E. Long QT syndrome

(8 marks × 5 = 40 marks)



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FIRST YEAR M.Sc. ECHOCARDIOGRAPHY DEGREE EXAMINATION – JUNE 2016

SUBJECT: PAPER II: CLINICAL CARDIOLOGY
(2014 SCHEME)

Tuesday, June 07, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

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

1. Define Dyspnoea, NYHA classification and various causes. (20 marks)
2. Explain systematic interpretation of chest X-ray and also define Pulmonary flow. (20 marks)
3. **Short notes questions:**
 - 3A. Acute Myocardial Infarction
 - 3B. Wide complex Tachycardia
 - 3C. LV aneurysm
 - 3D. Kussmaul's sign
 - 3E. Beta-blockers

(8 marks × 5 = 40 marks)



MANIPAL UNIVERSITY**FIRST YEAR M.Sc. ECHOCARDIOGRAPHY DEGREE EXAMINATION – JUNE 2016****SUBJECT: PAPER III: ISCHEMIC/VALVULAR HEART DISEASE
(2014 SCHEME)**

Thursday, June 09, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

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

1. How do assess the severity of aortic stenosis in low flow low gradient aortic valve. (20 marks)
2. Explain in detail the diastolic function assessment of left ventricle. (20 marks)
3. **Short notes questions:**
 - 3A. Maximize rate of pressure rise (dp/dt)
 - 3B. Diagnosis and quantification of prosthetic valve stenosis
 - 3C. Pulmonary M-mode
 - 3D. CVP measurement
 - 3E. Severity assessment of Aortic regurgitation

(8 marks × 5 = 40 marks)



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MANIPAL UNIVERSITY

FIRST YEAR M.Sc. CARDIAC CATHETERIZATION AND INTERVENTIONAL TECHNOLOGY DEGREE EXAMINATION – JUNE 2016

SUBJECT: PAPER III: ISCHEMIC/VALVULAR HEART DISEASE

Thursday, June 09, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

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

1. Explain Bi-furcation stenting strategies in detail. (20 marks)

2. Explain slow flow/no-flow phenomenon in detail. Add a note on corrective measure for the same. Write on embolic protection devise. (20 marks)

3. Write short note on:

3A. Thrombus aspiration system

3B. Drug eluting stents

3C. Coronary ballons

3D. Left main stenting

3E. Brachytherapy

(8 marks × 5 = 40 marks)

