

Reg. No.

MANIPAL ACADEMY OF HIGHER EDUCATION

**FIRST YEAR M.Sc. CARDIAC CATHETERIZATION AND INTERVENTIONAL
TECHNOLOGY DEGREE EXAMINATION – MAY/JUNE 2018**

**SUBJECT: PAPER II: ELECTROPHYSIOLOGY AND CARDIAC PACEMAKERS
(2015 SCHEME)**

Saturday, June 02, 2018

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

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

1. Explain the pacemaker timing cycles and intervals; Describe PMT in brief. (20 marks)
2. Explain the indication and clinical application of electrophysiological study briefly. (20 marks)
3. **Write short note on:**
 - 3A. SAECG
 - 3B. Beta blockers
 - 3C. Indication for ICD implantation and its components
 - 3D. Pacemakers in chronic heart failure
 - 3E. HUTT (Head up tilt table) test(8 marks × 5 = 40 marks)



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FIRST YEAR M.Sc. ECHOCARDIOGRAPHY DEGREE EXAMINATION – MAY/JUNE 2018

SUBJECT: PAPER II: CLINICAL CARDIOLOGY
(2015 SCHEME)

Saturday, June 02, 2018

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

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

1. Define cyanosis, types and evaluation in detail. (20 marks)

2. Define JVP, analysis and abnormalities of the waves in detail. (20 marks)

3. **Short notes questions:**

- 3A. Acute Myocardial Infarction
3B. Narrow complex Tachycardia
3C. LV aneurysm
3D. Pulsus alternans
3E. Beta-blockers

(8 marks × 5 = 40 marks)



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FIRST YEAR M.Sc. ECHOCARDIOGRAPHY DEGREE EXAMINATION – MAY/JUNE 2018

SUBJECT: PAPER III: ISCHEMIC/VALVULAR HEART DISEASE
(2015 SCHEME)

Tuesday, June 05, 2018

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

✍ **Answer ALL the questions.**

✍ **Draw the diagram wherever necessary.**

1. Explain etiology of MR. Write quantitative assessment of MR in detail with various formulas.
(20 marks)

2. Explain low gradient severe Aortic stenosis with depressed and preserved EF.
(20 marks)

3. **Short notes questions:**

3A. Role of Echo in ACS

3B. Peripheral pulmonary stenosis

3C. Technical limitations that can overestimate Aortic stenosis severity

3D. Acute Inferior wall MI

3E. Myocardial viability

(8 marks × 5 = 40 marks)



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FIRST YEAR M.Sc. CARDIAC CATHETERIZATION AND INTERVENTIONAL
TECHNOLOGY DEGREE EXAMINATION – MAY/JUNE 2018

SUBJECT: PAPER III: ISCHEMIC/VALVULAR HEART DISEASE
(2015 SCHEME)

Tuesday, June 05, 2018

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

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

1. Explain aortic valvuloplasty and future solutions to aortic valve disease in detail.
(20 marks)
2. What is IVUS? Explain role of IVUS in coronary intervention, Indications and management.
(20 marks)
3. **Write short note on:**
 - 3A. Left main stenting
 - 3B. Balloon Pulmonary valvuloplasty
 - 3C. Severity assessment of AR
 - 3D. TIMI flow
 - 3E. Intra aortic ballon pump

(8 marks × 5 = 40 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION

FRIST YEAR MSC. RT / MOPT/MSc. ECG/MSc. CCIT/ MSc. NMT/ MSc. MLT/ MOT/ MSc. RRT & DT/ MASLP
SECOND SEMESTER M.Sc. MRP/MSc. EXERCISE AND SPORTS SCIENCE / M.Sc. MIT/ M.Sc. HIM/M.Sc. CLINICAL PSYCHOLOGY
DEGREE EXAMINATION – MAY/JUNE 2018

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

Tuesday, May 29, 2018

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

✍ **Answer ALL the questions.**

- 1A. Define mean, median, mode, standard deviation and coefficient of variation.
- 1B. What do you mean by simple random sampling? Explain lottery method in simple random sampling with the help of an example.
(5+5 = 10 marks)

- 2A. Write two examples of Poisson random variable. Enumerate the properties of Poisson distribution.
- 2B. Define sampling distribution, standard error and confidence interval. Write two applications of standard error in inferential statistics.
(5+5 = 10 marks)

- 3A. Briefly explain the steps involved in one way ANOVA.
- 3B. A research team wants to know the prevalence of anaemia among primary school going children in a rural area in southern India. A previous study conducted few years before in the same population showed that the prevalence of anaemia among primary school children was 15%. What is the minimum sample size required if absolute precision (margin of error) is 3% and confidence level of 95%?
(5+5 = 10 marks)

4. Explain the structure of a research thesis.
(10 marks)

5. A sample of 160 women between 75 and 80 years old were classified into one of two groups based on whether they took Vitamin E supplements at the time of enrolment. Each woman was subsequently given a test to measure cognitive ability. Higher scores on this test indicate better cognition. The average test score amongst 60 women taking vitamin E was 27 with standard

deviation of 6.9 as compared to a mean score of 24 with a standard deviation of 6.2 among 100 women not taking the supplements. The research team wants to know whether the mean scores differ significantly between the two groups.

- i) Name the statistical test used for comparing the mean scores between the two groups.
- ii) What are the assumptions for this test?
- iii) State the null and alternate hypothesis for this test?
- iv) Compute the test statistic for this test.
- v) State whether the test is one sided or two sided test. Justify your answer.

(1+2+2+4+1 = 10 marks)

6. Explain the design, measure of strength of association, strength and weakness of cohort study design.

(10 marks)

7. **Write short notes on:**

- 7A. Wilcoxon signed rank test
- 7B. Cross sectional study design
- 7C. Logistic regression
- 7D. Validity of diagnostic tests

(5 marks × 4 = 20 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR M.Sc. CARDIAC CATHETERIZATION AND INTERVENTIONAL TECHNOLOGY DEGREE EXAMINATION – MAY/JUNE 2018

SUBJECT: PAPER I: BASICS IN INTERVENTION (2015 SCHEME)

Thursday, May 31, 2018

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

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

1. Explain the embryological basis of coronary artery formation, describe the common coronary artery anomalies. (20 marks)

2. Explain indication, course, procedural techniques, diagnostic prospect and complication associated with right heart catheterization. (20 marks)

3. **Write short note on:**

3A. Glycoprotein IIb IIIa receptor antagonist

3B. Complication of MI

3C. Quantitative assessment of cardiac function

3D. Role of TEE in cath lab

3E. Embolic protection devices

(8 marks × 5 = 40 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR M.Sc. ECHOCARDIOGRAPHY DEGREE EXAMINATION – MAY/JUNE 2018

SUBJECT: PAPER I: EMBRYOLOGY & ULTRASOUND PHYSICS
(2015 SCHEME)

Thursday, May 31, 2018

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

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

1. Explain anomalous development of pharyngeal arch arteries. (20 marks)

2. Explain fetal circulation and changes in circulation at birth. (20 marks)

3. **Short notes questions:**

- 3A. Flow masking in Doppler
3B. Vitelline vein formation
3C. Defective formation of septa
3D. Ultrasound in Prosthetic valves
3E. Pulmonary capillary wedge pressure

(8 marks × 5 = 40 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST YEAR M.Sc. (RESPIRATORY THERAPY) DEGREE EXAMINATION – MAY/JUNE 2018

SUBJECT: BASIC SCIENCES

(SPECIALITY: ADULT CARDIO RESPIRATORY CARE / NEONATAL & PEDIATRIC RESPIRATORY CARE)
(2013 SCHEME)

Thursday, May 31, 2018

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

 **All questions are compulsory.**

1. Discuss anti-infective bronchodilators and adrenergic bronchodilators.

(16 marks)

2. Describe in detail coronary and pulmonary circulation.

(16 marks)

3. **Short notes:**

3A. Hyperkalemia

3B. Carbon dioxide transport

3C. Events of cardiac cycle

3D. Muscles of respiration

3E. Metabolic acidosis

3F. Mucous controlling agent

(8 marks × 6 = 48 marks)

