

# Question Paper

Exam Date & Time: 03-Jun-2024 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

**THIRD SEMESTER M.Sc. (ECHOCARDIOGRAPHY) DEGREE EXAMINATION -JUNE 2024**  
**SUBJECT: CVS6102- CARDIAC PACEMAKERS AND DEFIBRILLATORS**  
**(2021 SCHEME)**

**Marks: 100**

**Duration: 180 mins.**

**Answer all the questions.**

- |     |   |      |
|-----|---|------|
| 1)  | Explain the role of CRTD in LV dysfunction patients   | (20) |
| 2)  | Explain the physiology of cardiac pacing in DDDR pacemakers. Write a note on pacemaker-mediated tachycardia | (20) |
| 3A) | Explain the interpretation and diagnosis of the cause of syncope in the tilt table test                     | (10) |
| 3B) | Explain the parameters to be assessed during regular ICD analysis   | (10) |
| 3C) | Explain the mechanism of tachycardia detection and therapy in ICD   | (10) |
| 3D) | Explain the effect of site of pacing on the physiology of conduction  | (10) |
| 4A) | Enumerate the evolving indications for pacemaker implantation   | (5)  |
| 4B) | Explain the possible ECG findings in VVI pacemaker  | (5)  |
| 4C) | Explain the pacemaker-induced cardiomyopathy  | (5)  |
| 4D) | Explain the clinical signs of pacemaker malfunction   | (5)  |

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# Question Paper

Exam Date & Time: 04-Jun-2024 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

**THIRD SEMESTER M.Sc.(CARDIAC CATH & INTERVENTION TECHNOLOGY) DEGREE EXAMINATION - JUNE 2024**  
**SUBJECT: MCAT 701- CARDIAC CATH AND INTERVENTION IN CHD**  
**(2018 SCHEME)**

**Marks: 100**

**Duration: 180 mins.**

**Answer all the questions.**

- |     |  |      |
|-----|--|------|
| 1)  | Discuss the various techniques for determining cardiac output by cardiac catheterization           | (20) |
| 2)  | Discuss the guidelines of therapeutic cardiac catheterization in various congenital heart diseases | (20) |
| 3A) | Explain the steps in antegrade approach for ventricular septal device closures                     | (10) |
| 3B) | Write a note on coil closure of Patent ductus arteriosus by cardiac catheterization                | (10) |
| 3C) | Write a note on coronary and pulmonary arteriovenous fistula                                       | (10) |
| 3D) | Write a note on cardiac ventriculography   | (10) |
| 4A) | Write a note on pulmonary blood flow and resistance  | (5)  |
| 4B) | Write the Rastelli's classification for atrioventricular septal defects                            | (5)  |
| 4C) | Write a note on different views on angiography for various types of ventricular septal defects     | (5)  |
| 4D) | Write a note on pulmonary AV fistula   | (5)  |

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# Question Paper

Exam Date & Time: 05-Jun-2024 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

**THIRD SEMESTER M.Sc.(CARDIAC CATH & INTERVENTION TECHNOLOGY) DEGREE EXAMINATION -JUNE 2024**  
**SUBJECT: MCAT 703- CARDIAC CATH AND INTERVENTION IN HEART FAILURE**  
**(2018 SCHEME)**

**Marks: 100**

**Duration: 180 mins.**

**Answer all the questions.**

- |     |  |      |
|-----|--|------|
| 1)  | Explain the clinical examination to assess the hemodynamic state of patients with heart failure. | (20) |
| 2)  | Explain the etiology and underlying pathophysiology of heart failure in infants                  | (20) |
| 3A) | Elaborate on the stages of the cardiac cycle detail  | (10) |
| 3B) | Describe LV remodelling in heart failure   | (10) |
| 3C) | Explain etiopathogenesis of HF with preserved EF   | (10) |
| 3D) | Elaborate on etiopathogenesis of ischemic heart disease in heart failure                         | (10) |
| 4A) | Write a short note on gene therapy   | (5)  |
| 4B) | Summarize on endomyocardial biopsy   | (5)  |
| 4C) | Write a note on Mechanical circulatory support   | (5)  |
| 4D) | Explain the indications for cardiac transplantation  | (5)  |

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