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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**DM (CARDIOLOGY) DEGREE EXAMINATION – SEPTEMBER 2021**  
**SUBJECT: PAPER I: BASIC SCIENCES**

Wednesday, September 01, 2021

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Discuss the development anatomy congenital abnormalities of conotruncal system  
(20 marks)
2. Molecular Genetics, clinical features and management of hypertrophic cardiomyopathy  
(20 marks)

3. **Short Essay:**

- 3A. Pathophysiology of Acute Rheumatic Fever
- 3B. Cardiac Transplantation
- 3C. Ion Channels in Heart
- 3D. Restrictive Cardiomyopathy Diagnosis and Management
- 3E. Coronary Artery Anomalies in Congenital Heart Disease
- 3F. Classification and Clinical Features of Rupture Sinus of Valsalva  
(10 marks × 6 = 60 marks)





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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**DM (CARDIOLOGY) DEGREE EXAMINATION – SEPTEMBER 2021**  
**SUBJECT: PAPER II: ISCHEMIC HEART DISEASE**

Thursday, September 02, 2021

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

**✍ Answer ALL the questions.**

1. Describe Non invasive assessment of LV end diastolic pressure. (20 marks)

2. Assess myocardial viability. (20 marks)

3. **Write Short notes on:**

3A. Elaborate on the etiopathogenesis and management of stent thrombosis

3B. Natural history of venous and arterial coronary bypass grafts

3C. FFR technique and evidence

3D. Takasubo cardiomyopathy

3E. Culottes techniques

3F. Write on the role of implantable cardioverter defibrillator in heart failure.

(10 marks × 6 = 60 marks)



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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**DM (CARDIOLOGY) DEGREE EXAMINATION – SEPTEMBER 2021**  
**SUBJECT: PAPER III: CONGENITAL AND VALVULAR HEART DISEASE**

Friday, September 03, 2021

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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✍ **Answer ALL the questions.**

1. Describe classification, diagnosis and management of Aortic dissection. (20 marks)
  
2. Describe the clinical features, diagnosis and management of Severe valvular pulmonary stenosis with intact ventricular septum. (20 marks)
  
3. **Write Short notes on:**
  - 3A. Prosthetic valve thrombosis
  - 3B. Functional MR
  - 3C. Fontan circulation
  - 3D. Hypoplastic left heart syndrome
  - 3E. Congenital mitral stenosis
  - 3F. Tricuspid stenosis

(10 marks × 6 = 60 marks)





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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**DM (CARDIOLOGY) DEGREE EXAMINATION – SEPTEMBER 2021**  
**SUBJECT: PAPER IV: OTHER CARDIO VASCULAR DISEASES**

Saturday, September 04, 2021

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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✍ **Answer ALL the questions.**

1. Define Massive pulmonary embolism. Describe Diagnosis and management of massive pulmonary embolism. Add a short note on role of newer thrombolytic agents in pulmonary embolism.

(20 marks)

2. Define Sudden cardiac death. Describe Markers of SCD and preventive measures. Add a short note on SCD in young athletes.

(20 marks)

3. **Write Short notes on:**

3A. Refractory end stage heart failure.

3B. Asymptomatic severe AS.

3C. RV dysfunction.

3D. Newer bio markers in cardiology.

3E. Cardiac MRI.

3F. Cardio renal syndrome.

(10 marks × 6 = 60 marks)

