

**B.Sc. CARDIAC TECHNOLOGY**  
(New Syllabus 2014-2015)

**SECOND YEAR**

**PAPER I – CLINICAL FEATURES AND TREATMENT RELEVANT TO  
CARDIAC TECHNOLOGY AND BASIC LIFE SUPPORT**

*Q.P. Code : 801531*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Define Heart failure, its classification, clinical features, treatment and complications.
2. Discuss in detail about cardiac tamponade its causes, clinical features and management.
3. Discuss the various steps involved in basic life support and significance of it.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Raynaud's phenomenon.
2. Classification of anti arrhythmic agents.
3. Define unstable angina. Mention the drugs used in managing angina.
4. Write a note on mitral stenosis.
5. Define syncope, causes and types.
6. Echocardiographic features of HCM.
7. Short note on viral myocarditis.
8. Classification of antihypertensive drugs.

**III. Write Notes on:**

**(10 x 3 = 30)**

1. Classification of congenital heart disease.
2. Approach to cardiogenic shock.
3. Thrombolytic agents.
4. Clinical features of severe Aortic stenosis.
5. Blood supply of the heart.
6. ECG features in complete Heart Block.
7. What is pericarditis? Mention its types.
8. Conduction system of the heart.
9. Mention cardiac biomarkers and their significance.
10. Mention the types of ASD (Atrial Septal Defect).

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**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Define cardiac emergencies and detail about cardiac arrest?
2. Electro cardiographic features used in testing for diagnosis of coronary artery disease.
3. Define angina pectoris and explain etiology, pathophysiology, clinical manifestation, diagnosis and treatment modalities of Raynaud's disease?

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Indication of heart block?
2. Cardio Pulmonary Resuscitation.
3. Post MI exercise testing indication and usefulness?
4. Treatment for cardio vascular disorders.
5. Approach to shock.
6. Airway management.
7. Describe the etiology, pathophysiology of valvular disorders of the heart?
8. Explain detail about congenital heart disease.

**III. Write Notes on:**

**(10 x 3 = 30)**

1. Anaphylaxis.
2. Safe transfer of patient to definitive care areas.
3. Initial management of shock.
4. Indication for cardiac tamponade.
5. Assessment of ventricular arrhythmias.
6. Drugs for endocarditis.
7. Physical assessment of artherosclerosis.
8. Treatment modalities of hypertension.
9. Syncope.
10. Diagnosis of CCF.

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**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Describe basic life support and explain detail about approach to trauma patients?
2. Explain on cardiac dysrhythmias and heart block?
3. Discuss about aneurysms and its etiology, pathophysiology and clinical manifestation?

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Initial management of myocardial infarction.
2. Ischemic heart disease.
3. List out the clinical manifestation of cardiac myopathy.
4. Approach to restless patient.
5. What is coronary artery disease and its treatment modalities?
6. Pathophysiology of Raynaud's disease.
7. Causes of congenital heart disease.
8. Describe pulmonary edema.

**III. Write Notes on:**

**(10 x 3 = 30)**

1. What is cardiac failure?
2. CPR.
3. Treatment of myocardial infarction.
4. Aneurism.
5. Post-op care for cardiac surgery.
6. Features of Rheumatic heart disease.
7. Angina pectoris?
8. Classification of cardiac emergencies.
9. What is cardiac output?
10. Etiology of Cardiogenic shock.

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**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Etiology, clinical features, diagnosis and treatment of atrial fibrillation.
2. Etiology, pathophysiology, diagnosis and treatment of pulmonary embolism.
3. Risk factors, diagnosis and treatment of Chronic stable angina.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Dissection of aorta.
2. Criteria for diagnosis of infective endocarditis.
3. Thromboangiitis obliterans.
4. Anticoagulants.
5. Resuscitative measure in ventricular fibrillation.
6. Cardiogenic shock.
7. Heart block.
8. Biomarkers in myocardial infarction.

**III. Write Notes on:**

**(10 x 3 = 30)**

1. Complications of hypertension.
2. Uses of digoxin.
3. Fallot's tetralogy.
4. Drugs used in congestive cardiac failure.
5. Etiological causes of infective endocarditis.
6. Prothrombin time.
7. Uses of central venous catheter.
8. Complications of mechanical ventilation.
9. Types of shock.
10. STEMI.

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**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Etiology, clinical features, diagnosis and treatment in infective endocarditis.
2. Etiology, pathophysiology, diagnosis and treatment of shock.
3. Classify, diagnosis and treatment of hypertension.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Coronary angiogram.
2. Raynaud's disease.
3. Complications of infective endocarditis.
4. Low-molecular weight heparin.
5. Clinical features of acute pulmonary oedema.
6. Atrial septal defect.
7. Clinical features and treatment of atrial fibrillation.
8. Clinical features of mitral stenosis.

**III. Write Notes on:**

**(10 x 3 = 30)**

1. Complications of pericardial effusion.
2. Drugs used in treatment of anaphylaxis.
3. Ventricular septal defect.
4. Uses of Thrombolytic agents.
5. Post traumatic seizures.
6. Clinical features of limb ischemia.
7. Indications of pacemaker.
8. Arterial blood gas analysis.
9. Causes of syncope.
10. NSTEMI.

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**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Etiology, clinical features, diagnosis and treatment of acute myocardial infarction.
2. Etiology, pathophysiology, diagnosis and treatment of acute rheumatic fever.
3. Etiology, pathophysiology, diagnosis and treatment of congestive cardiac failure.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Vasovagal syncope.
2. Treatment of chronic angina.
3. Anaphylactic shock.
4. Investigations in Infective endocarditis.
5. Clinical features of pericardial tamponade.
6. Antiplatelet drugs.
7. Malignant hypertension.
8. Pathology of cor –pulmonale.

**III. Write Notes on:**

**(10 x 3 = 30)**

1. Raynaud's phenomenon - symptoms.
2. Uses of Diuretics.
3. Clinical features of Atrial septal defect.
4. Drugs used in pulmonary oedema.
5. Uses of morphine cardiac emergencies.
6. Causes of hypotension.
7. Types of endotracheal tube.
8. Methods of non-invasive ventilation.
9. Causes of delirium.
10. Definition of unstable angina.

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*Q.P. Code: 801531*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Etiology, clinical features, diagnosis and treatment of mitral stenosis.
2. Etiology, pathophysiology, diagnosis and treatment of pulmonary embolism.
3. Etiology, clinical features and management of constrictive pericarditis.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Classification of acute coronary syndrome.
2. Treatment of infective endocarditis.
3. Clinical features of aortic regurgitation.
4. Adult Basic Life Support Algorithm for healthcare providers.
5. Clinical features of cardiac tamponade.
6. Indications for heart transplantation.
7. Types of ventricular septal defect.
8. Management of complete heart block.

**III. Write Notes on:**

**(10 x 3 = 30)**

1. Give three examples for supraventricular tachycardias with line diagrams.
2. Management of hypertensive emergency.
3. Diagnostic criteria for acute rheumatic fever.
4. Neurocardiogenic syncope.
5. Classification of hypertension.
6. Mechanism of action of amiodarone.
7. Prothrombin time.
8. Venturi mask.
9. Components of Fallot's Tetralogy.
10. Endotracheal tube.

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**B.Sc. CARDIAC TECHNOLOGY**  
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**SECOND YEAR**

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*Q.P. Code: 801531*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Etiology, clinical features, diagnosis and treatment of atrial fibrillation.
2. Etiology, pathophysiology, diagnosis and treatment of cardiogenic shock.
3. Define heart failure, its classification, clinical features, treatment and complications.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Prinzmetal's angina.
2. Diagnosis of infective endocarditis.
3. Clinical features of mitral stenosis.
4. Clinical classification of pulmonary hypertension.
5. Clinical features of constrictive pericarditis.
6. Low molecular weight heparins.
7. Classification of anti-arrhythmic agents.
8. Cardiac biomarkers.

**III. Write Notes on:**

**(10 x 3 = 30)**

1. Illustrate coronary circulation.
2. Conduction system of the heart.
3. Name three thrombolytic agents.
4. List the major criteria for the diagnosis of acute rheumatic fever.
5. What is pulsus paradoxus?
6. List some causes for syncope.
7. Illustrate types of second degree heart block.
8. What is International normalized ratio?
9. List three bradyarrhythmias and provide diagrams of the same.
10. Management of ventricular fibrillation.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0321]

**MARCH 2021**

**Sub. Code: 1531**

**(AUGUST 2020 EXAM SESSION)**

**B.Sc. CARDIAC TECHNOLOGY**

**SECOND YEAR (Regulation 2014-2015 )**

**PAPER I – CLINICAL FEATURES AND TREATMENT RELEVANT TO  
CARDIAC TECHNOLOGY AND BASIC LIFE SUPPORT**

*Q.P. Code : 801531*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Etiology, clinical features, diagnosis and treatment of aortic stenosis.
2. Etiology, pathophysiology, diagnosis and treatment of cardiogenic shock.
3. Define heart failure, its classification, clinical features, treatment and complications.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Diagnosis of unstable angina.
2. Diagnosis of infective endocarditis.
3. Clinical features of mitral regurgitation.
4. Evaluation of pulmonary hypertension.
5. Clinical features of constrictive pericarditis.
6. Indications for heart transplantation.
7. Types of atrial septal defect.
8. Management of atrial fibrillation.

**III. Write Notes on:**

**(10 x 3 = 30)**

1. List three bradyarrhythmias and provide diagrams of the same.
2. Conduction system of the heart.
3. Define hypertensive emergency.
4. List the major criteria for the diagnosis of acute rheumatic fever.
5. Classification of hypertension.
6. Name three etiologies for mitral stenosis.
7. Adult Basic Life Support algorithm.
8. What is International normalized ratio?
9. Components of Fallot's Tetralogy.
10. Name three inotropic drugs.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[AHS 0222]**

**FEBRUARY 2022  
(AUGUST 2021 EXAM SESSION)**

**Sub. Code: 1531**

**B.Sc. CARDIAC TECHNOLOGY  
SECOND YEAR (Regulation 2014-2015 )  
PAPER I – CLINICAL FEATURES AND TREATMENT RELEVANT TO  
CARDIAC TECHNOLOGY AND BASIC LIFE SUPPORT  
*Q.P. Code : 801531***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on: (3 x 10 = 30)**

1. Etiology, pathophysiology, diagnosis and treatment of shock.
2. Discuss about aneurysm and its etiology, pathophysiology and clinical manifestation?
3. Risk factor, diagnosis and treatment of unstable angina.

**II. Write Notes on: (8 x 5 = 40)**

1. Dissection of aorta.
2. Cardiopulmonary resuscitation.
3. Echocardiographic feature in HCM.
4. Mitral stenosis.
5. Clinical features of Acute pulmonary edema.
6. Raynaud's disease.
7. Define syncope, causes and types.
8. Cardiac emergencies and arrest.

**III. Write Notes on: (10 x 3 = 30)**

1. Approach to trauma patients.
2. Causes and clinical manifestations of Cor-pulmonale.
3. Post-op care of cardiac surgery.
4. Classification of Diuretics.
5. Intra Aortic Balloon Pump.
6. Holter monitoring.
7. Ventricular septal disease.
8. Anaphylaxis.
9. Cardiac output.
10. Features of Rheumatic heart disease.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0922]

SEPTEMBER 2022

Sub. Code: 1531

(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)

**B.Sc. CARDIAC TECHNOLOGY  
SECOND YEAR (Regulation from 2014-2015)  
PAPER I – CLINICAL FEATURES AND TREATMENT RELEVANT TO  
CARDIAC TECHNOLOGY AND BASIC LIFE SUPPORT  
*Q.P. Code : 801531***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Discuss the various types of Shock. Discuss the clinical features, diagnosis and treatment of cardiogenic shock.
2. Mention clinical features, diagnosis and treatment of pulmonary embolism.
3. Explain in detail about the clinical features, diagnosis and treatment of cardiac tamponade.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Aetiology and diagnosis of mitral stenosis.
2. Mention diagnostic features of aortic dissection.
3. Mention and discuss five causes of cardiac murmur.
4. Discuss cardiac cause of chest pain.
5. Complete heart block.
6. Acute myocardial infarction - treatment.
7. Dilated cardiomyopathy causes and clinical features.
8. Discuss the Left to right shunts. Mention three causes.

**III. Write Notes on:**

**(10 x 3 = 30)**

1. Inotropes.
2. Name three drugs for treating hypertension.
3. Causes of cyanosis.
4. Name three organisms causing infective endocarditis.
5. Management of Anaphylaxis.
6. Treatment of Ventricular tachycardia.
7. Characteristics of Angina pectoris pain.
8. Mention few causes of dyspnoea.
9. Mention three causes of bradycardia.
10. Types of Atrial septal defects.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0423]

APRIL 2023

Sub. Code: 1531

**B.Sc. CARDIAC TECHNOLOGY**  
**SECOND YEAR (Regulations 2014-2015, 2018-2019 & 2020-2021 onwards)**  
**PAPER I – CLINICAL FEATURES AND TREATMENT RELEVANT TO**  
**CARDIAC TECHNOLOGY AND BASIC LIFE SUPPORT**  
*Q.P. Code: 801531*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Explain on Cardiac Dysrhythmias. Mention in detail about Heart Block.
2. Discuss about the various types of Cardiomyopathy and its etiology, pathophysiology, clinical manifestations and treatment.
3. Etiology, pathophysiology, diagnosis, and treatment of Pulmonary Embolism.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Management of Pulmonary Edema.
2. Acute Coronary Syndromes.
3. Pathophysiology of Raynaud's disease.
4. Anticoagulants.
5. Cardiogenic shock.
6. Airway management.
7. Define Syncope - Causes and types.
8. Cardiopulmonary resuscitation.

**III. Write Notes on:**

**(10 x 3 = 30)**

1. Anaphylaxis.
2. Mention cardiac biomarkers and their significance.
3. Adrenaline.
4. What is Pericarditis? Mention the types.
5. Diagnosis of CCF.
6. Cardiac Tamponade.
7. Causes of Aortic stenosis and various treatment modalities.
8. Post traumatic seizures.
9. Uses of central venous catheter.
10. Treatment of Septic shock.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 1123]

**NOVEMBER 2023**

**Sub. Code: 1531**

**B.Sc. CARDIAC TECHNOLOGY**

**SECOND YEAR (Regulations 2014-2015, 2018-2019 & 2020-2021 onwards)**

**PAPER I – CLINICAL FEATURES AND TREATMENT RELEVANT TO  
CARDIAC TECHNOLOGY AND BASIC LIFE SUPPORT**

*Q.P. Code: 801531*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Classification, Diagnosis and Treatment of Hypertension.
2. Discuss the various steps involved in Basic Life Support and its significance.
3. Explain etiology, pathophysiology, clinical manifestation, diagnosis treatment modalities of Raynaud's disease.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Define Unstable Angina and mention the drugs used in managing angina.
2. Viral myocarditis.
3. Approach to shock.
4. Initial management of Myocardial Infarction.
5. Pulmonary Edema.
6. Coronary Artery Bypass Graft.
7. Low-Molecular Weight Heparin.
8. Cor-Pulmonale.

**III. Write Notes on:**

**(10 x 3 = 30)**

1. Thromboangiitis obliterans.
2. Fallot's tetralogy.
3. Complication of Mechanical Ventilation.
4. Uses of Digoxin.
5. Anaphylaxis.
6. Drugs for Endocarditis.
7. Physical assessment of Atherosclerosis.
8. Complete Heart Block - Management.
9. Complication of Pericardial effusion.
10. Acute Rheumatic fever - Clinical features.

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