

B.Sc. CARDIAC TECHNOLOGY**FIRST YEAR****Paper II – PATHOLOGY, MICROBIOLOGY AND PHARMACOLOGY
RELATED TO CARDIAC TECHNOLOGY***Q.P. Code : 801509***Time: Three Hours****Maximum: 100 Marks****Answer all questions****I. Elaborate on:****(3 x 10 = 30)**

1. Discuss in detail about etiopathogenesis, morphology, diagnostic criteria and clinical features of Infective Endocarditis.
2. Classify anti arrhythmics drugs. Discuss the mechanism of action and therapeutic uses of class III anti arrhythmic drugs.
3. What is Cardiomyopathy? Briefly describe the causes and clinical presentation of different types of Cardiomyopathy.

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

1. Thrombolytic therapy- agents and complications.
2. Mention the merits of sublingual route of drug administration.
3. Pathophysiology of acute coronary syndrome.
4. Tetralogy of Fallot.
5. Five important causes of Pericarditis.
6. Rheumatic Fever.
7. Complications of myocardial infarction.
8. Giant cell arteritis.

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

1. Calcium Channel Blockers.
2. Name 5 cardiotoxic drugs.
3. Viral causes of Myocarditis.
4. Mitral stenosis.
5. Valvuloplasty.
6. Risk factors for atherosclerosis.
7. Name any 3 causes of secondary hypertension.
8. Raynaud Phenomenon.
9. Patent ductus arteriosus.
10. Name 3 conditions related to electrical disturbances of heart.

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

FIRST YEAR

**Paper II – PATHOLOGY, MICROBIOLOGY AND PHARMACOLOGY
RELATED TO CARDIAC TECHNOLOGY**

Q.P. Code : 801509

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Clinical features, diagnosis and complications of acute myocardial infarction.
2. Describe the conduction system of the heart. Write a detailed note on conduction disturbances of the heart.
3. Enumerate drugs used in hyperlipidemia. Describe in detail about statins.

II. Write Notes on:

(8 x 5 = 40)

1. Antihypertensives drugs.
2. Protamine.
3. Explain the uses and adverse effects of proton pump inhibitors.
4. Hypertrophic Cardiomyopathy.
5. Etiology and clinical features of constrictive pericarditis.
6. Major criteria for Infective Endocarditis.
7. Atherosclerosis.
8. Rheumatic fever.

III. Short Notes on:

(10 x 3 = 30)

1. Systemic Hypertension.
2. Write about Warfarin.
3. Digoxin.
4. Name 3 cyanotic congenital heart diseases.
5. Takayasu Arteritis.
6. Pulmonary thromboembolism.
7. Aortic aneurysm.
8. Sinus node dysfunction.
9. Prevention of Deep vein Thrombosis.
10. Enumerate non modifiable coronary risk factors.

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FIRST YEAR

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Q.P. Code : 801509

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Discuss the causes, clinical features, and complications of different types of Cardiomyopathy.
2. Classify anti hypertensive drugs. Discuss the mechanism of action and therapeutic uses of ACE inhibitors.
3. Explain in detail about the Etiopathogenesis, morphological features and clinical feature of Infective Endocarditis.

II. Write Notes on:

(8 x 5 = 40)

1. Atrial septal defect.
2. Draw and label the structure of atheromatous plaque.
3. Takayasu arteritis.
4. Treatment for congestive cardiac failure.
5. Acute dissection of aorta.
6. Causes and complications of secondary hypertension.
7. Acute coronary syndrome.
8. Low dose Aspirin in myocardial infarction.

III. Short Notes on:

(10 x 3 = 30)

1. Types of cyanotic congenital heart disease.
2. Indication for cardioversion.
3. Warfarin.
4. Treatment of Supraventricular tachycardia.
5. Thromboangitis obliterans.
6. Mention advantages of sublingual route of drug administrations.
7. X ray chest and Echo findings in aortic regurgitation.
8. Radiofrequency ablation – Technique and indications.
9. Name three vascular tumors.
10. Name any three infectious causes for myocarditis.

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Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Discuss the clinical features, diagnosis and complications of acute myocardial infarction.
2. Define Aneurysm. Write in detail about the pathogenesis, morphology and complication of Aneurysm.
3. Explain in detail about the causes and medical management of heart failure.

II. Write Notes on:

(8 x 5 = 40)

1. Clinical features and diagnosis of patent ductus arteriosus.
2. Cardiac tamponade.
3. Raynaud's phenomenon.
4. Etiology and clinical features of rheumatic fever.
5. Types and causes of hypertension.
6. Clopidogrel in ischemic heart disease
7. Tetralogy of Fallot.
8. Class III anti arrhythmic drugs.

III. Short Notes on:

(10 x 3 = 30)

1. Labetalol.
2. Ebstein anomaly.
3. Complications of Pulmonary Hypertension.
4. Thrombolytic drugs.
5. ACE inhibitors.
6. Sinus tachycardia.
7. Changes in ageing heart.
8. Ambulatory ECG monitoring.
9. Common organisms causing infective endocarditis.
10. Chagas disease.

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Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Classify and mention the risk factors of hypertension. Briefly discuss about role of kidney in regulation of blood pressure.
2. What are the conditions affecting the heart valve? Discuss in detail about morphological changes in mitral valve in rheumatic heart disease.
3. What is aneurysm? Name two causes of aneurysm and describe the morphology.

II. Write Notes on:

(8 x 5 = 40)

1. Mitral valve prolapse.
2. Classification and mechanism of action of anti-arrhythmic drugs.
3. Risk factors in ischemic heart disease.
4. Classify cyanotic congenital heart diseases and describe the shunt mechanism.
5. Mention the microscopic changes in myocardial infarction.
6. What are the causes of dilated cardiomyopathy and gross appearance in this condition?
7. Predisposing factors for pulmonary hypertension.
8. Left atrial myxoma.

III. Short Notes on:

(10 x 3 = 30)

1. Coarctation of aorta.
2. Pulmonary embolism.
3. Angioplasty.
4. Causes of left sided heart failure.
5. Ventricular septal defect.
6. Classify calcium channel blockers.
7. Churg-Strauss syndrome.
8. Major risk factors of atherosclerosis.
9. Mention the infective and non-infective causes of pericarditis.
10. Thromboangitis obliterans.

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Q.P. Code : 801509

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Define atherosclerosis. Discuss about its major risk factors, pathogenesis and consequences.
2. Define vasculitis. Discuss about classification and characteristics of non-infectious vasculitis.
3. Classify anti thrombotic drugs. Discuss mechanism of action, side effects and uses of anti platelet drugs.

II. Write Notes on:

(8 x 5 = 40)

1. Causes of pericarditis.
2. Mitral valve prolapse.
3. Cardinal anatomic changes of mitral valve in rheumatic heart disease.
4. Diagnostic criteria for infective endocarditis.
5. Complications of cardiac valve prostheses.
6. ACE inhibitors in hypertension.
7. Anti failure management.
8. Complications of myocardial infarction.

III. Short Notes on:

(10 x 3 = 30)

1. Definition and types of aneurysm.
2. Raynaud phenomenon.
3. Varicose veins.
4. Endocrine causes of hypertension.
5. Cardiac myxoma.
6. Atrial septal defect.
7. Renin-Angiotensin mechanism.
8. Amiodarone.
9. Aschoff bodies.
10. Hypertrophic cardiomyopathy.

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Q.P. Code : 801509

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Classify anti-anginal drugs. Discuss the mechanism of action and therapeutic uses of beta blockers.
2. Discuss in detail about etiopathogenesis, diagnostic criteria of Rheumatic fever and name any three complications.
3. Classify congenital heart diseases. Briefly discuss pathogenesis, clinical features and morphology of Tetralogy of Fallot.

II. Write Notes on:

(8 x 5 = 40)

1. Describe the morphology of cardiac myxomas and name any other tumours of heart.
2. Classify the anti-atherosclerotic drugs. Discuss the mechanism of action of statins.
3. Enumerate the causes of acquired heart valve diseases.
4. Pathophysiology of congenital acyanotic heart diseases.
5. Mention the disorders predisposing to Cor Pulmonale.
6. Causes and consequences of hypertrophic cardiomyopathy.
7. What are the causes of aortic dissection and describe the different types?
8. What are the predisposing factors of hypertension?

III. Short Notes on:

(10 x 3 = 30)

1. Mitral regurgitation.
2. Cardiac tamponade.
3. Wegner's granulomatosis.
4. Causes of lymphedema.
5. Furosemide.
6. Atheromatous plaque.
7. Causes and effects of deep vein thrombosis.
8. Heart failure cells.
9. Complications of infective endocarditis.
10. Clopidogrel in the management of myocardial infarction.

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Time: Three Hours

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Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Define Atherosclerosis. Write briefly about etiopathogenesis and consequences of Atherosclerosis.
2. Explain in detail about Nitrates.
3. Elaborate the causes and clinical presentation of different types of cardiomyopathy.

II. Write Notes on:

(8 x 5 = 40)

1. Loop diuretics.
2. Beta blockers.
3. Digoxin.
4. Constrictive pericarditis.
5. Types of angina pectoris.
6. Aortic dissection.
7. Deep vein thrombosis.
8. Cardiac rehabilitation.

III. Short Notes on:

(10 x 3 = 30)

1. Mechanism of action and uses of Lignocaine.
2. What is Warfarin? Mention its indications.
3. Amiodarone.
4. Treatment of heparin toxicity.
5. Causes of myocarditis.
6. Takayasu Arteritis.
7. Sinus arrhythmia.
8. Ring abscess.
9. Chagas disease.
10. Enzyme studies done in myocardial infarction.

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Q.P. Code: 801509

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain in detail about Valvular heart disease.
2. Classify Antihypertensive drugs. Write in detail about calcium channel blockers.
3. What is Infective endocarditis? Explain the morphology, etiopathogenesis and clinical features of Infective endocarditis.

II. Write Notes on:

(8 x 5 = 40)

1. Low molecular weight Heparins.
2. Statins.
3. Class 1 Antiarrhythmic drugs.
4. Potassium sparing diuretics.
5. Ventricular Septal Defect.
6. Pulmonary thromboembolism.
7. Pathogenesis of Myocardial Infarction.
8. Raynaud phenomenon.

III. Short Notes on:

(10 x 3 = 30)

1. Labetolol.
2. Uses of Adrenaline.
3. Vasopressin analogues and their uses.
4. Glycoprotein 2b3a Antagonists.
5. Causes of heart failure.
6. What is Primary Pulmonary Hypertension?
7. Valvuloplasty.
8. Complications of Cardiac Valve Prosthesis.
9. Role of Renin in Hypertension.
10. Ebstein anomaly.

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Q.P. Code: 801509

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Enumerate antiplatelet drugs. Discuss the mechanism of action, uses and adverse effects of Aspirin.
2. Classify acyanotic heart diseases. Explain the pathogenesis and clinical presentation of diseases with left to right shunt.
3. Describe about etiology, clinical features, diagnosis and treatment of Rheumatic fever.

II. Write Notes on:

(8 x 5 = 40)

1. Fibrinolytics.
2. Angiotensin Converting Enzyme inhibitors.
3. Morphine.
4. Giant cell arteritis.
5. Cor pulmonale.
6. Tetralogy of Fallot.
7. Pericardial effusion.
8. Hypertrophic cardiomyopathy.

III. Short Notes on:

(10 x 3 = 30)

1. Adenosine.
2. Mechanism of action of Diazepam.
3. Uses of Corticosteroids.
4. Dobutamine.
5. Cardiac tamponade.
6. Major criteria of Infective endocarditis.
7. Pseudoaneurysm.
8. Enumerate non modifiable coronary risk factors.
9. Angioplasty.
10. Ambulatory ECG monitoring.

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

[AHS 0321]

MARCH 2021

Sub. Code: 1509

(AUGUST 2020 EXAM SESSION)

B.Sc. CARDIAC TECHNOLOGY

FIRST YEAR (Regulation 2014-2015)

PAPER II – PATHOLOGY, MICROBIOLOGY AND PHARMACOLOGY

RELATED TO CARDIAC TECHNOLOGY

Q.P. Code : 801509

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. What is Cardiomyopathy? Briefly describe the causes and clinical presentation of different types of Cardiomyopathy.
2. Define Aneurysm. Write in detail about the pathogenesis, morphology and complication of Aneurysm.
3. Classify and mention the risk factors of hypertension. Briefly discuss about role of kidney in regulation of blood pressure.

II. Write Notes on:

(8 x 5 = 40)

1. Tetralogy of Fallot.
2. Giant cell arteritis.
3. Explain the uses and adverse effects of proton pump inhibitors.
4. Clopidogrel in ischemic heart disease.
5. Left atrial myxoma.
6. Types of angina pectoris.
7. Potassium sparing diuretics.
8. Statins.

III. Short Notes on:

(10 x 3 = 30)

1. Varicose veins.
2. Atheromatous plaque.
3. Angioplasty.
4. Ebstein anomaly.
5. Aschoff bodies.
6. Causes of left sided heart failure.
7. Enumerate non modifiable coronary risk factors.
8. Valvuloplasty.
9. Name five cardiotoxic drugs.
10. Ring abscess.

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

[AHS 0422]

APRIL 2022

Sub. Code: 1509

(FEBRUARY 2021 & AUGUST 2021 EXAM SESSIONS)

FIRST YEAR (From 2014-2015 onwards)

B.Sc. CARDIAC TECHNOLOGY

PAPER II – PATHOLOGY, MICROBIOLOGY AND PHARMACOLOGY

RELATED TO CARDIAC TECHNOLOGY

Q.P NO. 801509

Time: Three hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3X10=30)

1. Explain in detail about Valvular heart diseases.
2. Discuss in detail about etiopathogenesis, diagnostic criteria of Rheumatic fever and name any three complications.
3. Classify anti thrombotic drugs. Discuss mechanism of action, side effects and uses of anti platelet drugs.

II. Write Notes on:

(8X5=40)

1. Thrombolytic therapy-agents and complications.
2. Protamine.
3. Treatment for congestive cardiac failure.
4. Clopidogrel in ischemic heart disease.
5. What are the causes of dilated cardiomyopathy and gross appearance in this condition?
6. ACE inhibitors in hypertension.
7. Mention the disorders predisposing to Cor Pulmonale.
8. Cardiac rehabilitation.

III. Write Short notes on:

(10X3=30)

1. Uses of Adrenaline.
2. Treatment of heparin toxicity.
3. Ambulatory ECG monitoring.
4. Renin-Angiotensin mechanism.
5. Churg-Strauss syndrome.
6. Changes in ageing heart.
7. X-ray chest and Echo findings in aortic regurgitation.
8. Acute coronary syndrome.
9. Enumerate non modifiable coronary risk factors.
10. Patent Ductus Arterisous.

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

[AHS 1122]

NOVEMBER 2022

Sub. Code: 1509

**B.Sc. CARDIAC TECHNOLOGY
FIRST YEAR (Regulation 2014-2015)
PAPER II – PATHOLOGY, MICROBIOLOGY AND PHARMACOLOGY
RELATED TO CARDIAC TECHNOLOGY
Q.P NO. 801509**

Time: Three hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3X10=30)

1. Classify antihypertensive drugs. Write in detail about the mechanism of action and therapeutic uses of ACE inhibitors.
2. Define Inflammation. Discuss in detail about Acute Inflammation and its events.
3. Enumerate Beta blockers. Write the uses and adverse effects of propranolol.

II. Write Notes on:

(8X5=40)

1. Transdermal therapeutic system.
2. Clopidogrel in Ischemic Heart Disease.
3. Pathogenesis, diagnosis and treatment of Hepatitis B.
4. Left atrial myxoma.
5. Acute dissection of aorta.
6. Draw and label the structure of atheromatous plaque.
7. Types, pathogenesis and treatment of shock.
8. Tetralogy of Fallot.

III. Write Short notes on

(10X3=30)

1. Define teratogenicity.
2. Define irreversible injury.
3. Angioplasty.
4. Mention three adverse effect of Digoxin.
5. Define Necrosis and write its types.
6. Define autoimmunity. Mention two autoimmune diseases.
7. What are lymphoid organs? Give some examples.
8. Name three cardiotoxic drugs.
9. Mention four uses of loop diuretics.
10. Name three surface anaesthetic agents.

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

[AHS 0423]

APRIL 2023

Sub. Code: 1509

B.Sc. CARDIAC TECHNOLOGY
FIRST YEAR (Regulations 2014-2015 & 2018-2019 onwards)
PAPER II – PATHOLOGY, MICROBIOLOGY AND PHARMACOLOGY
RELATED TO CARDIAC TECHNOLOGY

Q.P. Code: 801509

Time: Three hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 X 10 = 30)

1. Explain in detail about etiopathogenesis, morphology and fate of Thrombus.
2. Define Edema. Briefly describe the causes and clinical presentation of different types of Edema with suitable examples.
3. Classify Antianginal drugs. Write in detail about the mechanism of action, uses and adverse effects of Nitrates.

II. Write Notes on:

(8 X 5 = 40)

1. Write a brief note on Heparin
2. Class III Antiarrhythmic drugs.
3. Thiazide diuretics.
4. Mechanism of action, uses and adverse effects of Atorvastatin.
5. Explain the Wound Healing Process.
6. Define Gangrene. What are the risk factors and different types of Gangrene?
7. Pathogenesis of Primary hypertension.
8. Infective Endocarditis.

III. Write Short notes on:

(10 X 3 = 30)

1. Differentiate Atrophy and Hypertrophy.
2. Atrial Septal Defect.
3. Define Fatty change.
4. Aortic stenosis.
5. Dissecting aneurysm.
6. Enumerate Proton pump inhibitors and mention their uses.
7. Adverse effects of loop diuretics.
8. B-blockers.
9. Drugs used in Anaesthesia.
10. Dopamine.

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

[AHS 1123]

NOVEMBER 2023

Sub. Code: 1509

B.Sc. CARDIAC TECHNOLOGY

FIRST YEAR (Regulations 2014-2015 & 2018-2019 onwards)

PAPER II – PATHOLOGY, MICROBIOLOGY AND PHARMACOLOGY

RELATED TO CARDIAC TECHNOLOGY

Q.P. Code: 801509

Time: Three hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 X 10 = 30)

1. Elaborate the Gross and Microscopic features of different types of Tumors of the Heart.
2. Enumerate ACE inhibitors. Discuss in detail about mechanism of action, therapeutic uses and adverse effects of ACE inhibitors.
3. Define Pericarditis. Explain the causes, types and morphology of Pericarditis.

II. Write Notes on:

(8 X 5 = 40)

1. Lignocaine.
2. Calcium Channel Blockers.
3. Explain the action and uses of Antiplatelet drugs.
4. Adverse effects of Diuretics.
5. Causes and clinical features of Chronic Inflammation.
6. Necrosis.
7. Infective Endocarditis (Bacterial).
8. Etiopathogenesis and morphology of Valvular Heart Disease.

III. Write Short notes on

(10 X 3 = 30)

1. Cellular ageing.
2. Wound healing.
3. Coarctation of Aorta.
4. Risk factors and complications of Hypertension.
5. Gas Gangrene.
6. β -blockers.
7. Uses and adverse effects of Morphine.
8. Name three Lipid lowering agents and mention their side effects.
9. Low Molecular Weight Heparin.
10. Aminoglycosides.
