

Syllabus for the post of

Associate Professor, Cardiology, Class-I (Advt. No. 32/2023-24)

Marks – 200

Questions – 200

Medium - English

1. BASIC SCIENCES RELATED TO CARDIOLOGY:

CARDIAC ANATOMY

CARDIAC PHYSIOLOGY

CARDIAC MOLECULAR BIOLOGY

CARDIAC BIOCHEMISTRY

CARDIAC PHARMACOLOGY

CARDIAC PATHOLOGY

CARDIAC MICROBIOLOGY

2. CLINICAL CARDIOLOGY INCLUDING PEDIATRIC CARDIOLOGY:

A. HEART FAILURE

Pathophysiology and diagnosis of Heart Failure, Diagnosis and management of heart failure, Cardiac transplantation and mechanical ventricular support

B. RHYTHM AND CONDUCTION DISTURBANCES

Mechanisms of cardiac arrhythmias and conduction disturbances, Recognition, clinical assesment and management of arrhthmias and conduction disturbances, antiarrhythmic drugs, etc.

**C. SYNCOPE, SUDDEN DEATH AND CARDIO-PULMONARY
RESUSCITATION**

Diagnosis and management of syncopesudden cardiac death, Cardiopulmonary Resuscitation and the subsequent management of the patient etc.

D. CORONARY HEART DISEASE

Atherogenesis and its determinants, Pathology of coronary atherosclerosis, Coronary blood flow and myocardial ischemia, Dyslipidemia, other risk factors, and the prevention of coronary heart disease, Non atherosclerotic coronary heart disease, Diagnosis and management of patients with chronic ischemic heart disease, Diagnosis and management of patients with unstable angina, Diagnosis and management of patients with acute myocardial infarction, The electrocardiogram in Acute myocardial infarction, Thrombogenesis, antithrombotic and thrombolytic therapy, rehabilitation of the patient with coronary heart disease etc., Congenital heart disease and other paediatric cardiac disorders

E. SYSTEMIC ARTERIAL HYPERTENSION

Hypertension, epidemiology, pathophysiology, diagnosis and treatment.

F. PULMONARY HYPERTENSION AND PULMONARY DISEASE

Pulmonary hypertension Pulmonary embolism, Chronic Cor pulmonale etc.

G. VALVULAR HEART DISEASE

Acute rheumatic fever, Aortic valve disease, Mitral valve disease, Mitral valve prolapse syndrome, tricuspid valve, pulmonic valve and multivalvular disease, Clinical performance of prosthetic heart valves, Antithrombotic therapy for valvular heart disease etc

H. CONGENITAL HEART DISEASE

Cardiovascular disease due to genetic abnormalities, the pathology, pathophysiology, recognition and treatment of congenital heart diseases, Congenital heart disease in adults etc

I. CARDIOMYOPATHY AND SPECIFIC HEART MUSCLE DISEASES

Classification of cardiomyopathies, Dilated cardiomyopathy, hypertrophic cardiomyopathy, Restrictive, obliterative and infiltrative cardiomyopathies, Myocarditis and specific cardiomyopathies, endocrine disease and alcohol, AIDS and the cardiovascular system, Effect of noncardiac drugs, electricity, poisons and radiation and the heart etc.

J. PERICARDIAL DISEASES AND ENDOCARDITIS

Diseases of the pericardium, Infective endocarditis

K. THE HEART, ANESTHESIA, AND SURGERY

Perioperative evaluation and management of patients with known or suspected cardiovascular disease who undergo noncardiac surgery, Anesthesia and the patient with cardiovascular disease, etc

L. MISCELLANEOUS DISEASES AND CONDITIONS

The connective tissue diseases and the cardiovascular system, Neoplastic heart disease, Diabetes and cardiovascular disease, traumatic heart disease, effects of mood and anxiety disorders on the cardiovascular system, Heart disease and pregnancy, The heart and obesity, the heart and kidney disease, exercise and the cardiovascular system, Acute hemodynamics conditioning training the athlete's heart and sudden death, Cardiovascular aging in health and therapeutic considerations in older patients with cardiovascular diseases, women and coronary artery disease, Cardiac Cardiac trauma, Tumors of heart, Geriatric heart disease, General Anaesthesia and non cardiac surgery in patients with heart disease, Sports and Heart Disease Cardiac rehabilitation

M. TROPICAL CARDIOLOGY

Conditions which are specifically found in the tropics like rheumatic heart disease, Endomyocardial Fibrosis, Eosinophilic Heart Disease, Aortoarteritis etc.

N. DISEASES OF THE GREAT VESSELS AND PERIPHERAL VESSELS

Diagnosis and treatment of diseases of the aorta, Cerebrovascular disease and neurologic manifestations of heart disease, diagnosis and management of diseases of the peripheral arteries and veins, surgical treatment of peripheral vascular diseases, etc.

O. CARDIOVASCULAR DISEASE AND DISORDERS OF OTHER ORGANS

Endocrine Disorders and Cardiovascular Disease, Hemostasis, Thrombosis, Fibrinolysis, and Cardiovascular Disease, Rheumatic Fever, Rheumatic Diseases and the Cardiovascular System, The Patient with Cardiovascular Disease and

Cancer, Psychiatric Behavioral Aspects of Cardiovascular Disease, Neurological Disorders and Cardiovascular Disease, Interface Between Renal Disease and Cardiovascular Illness, Cardiovascular, Manifestations of Autonomic Disorders.

3. DIAGNOSTIC AND INTERVENTIONAL CARDIOLOGY INCLUDING CARDIAC INSTRUMENTATION.

A. DIAGNOSTIC CARDIOLOGY

The resting Electrocardiogram, The Chest roentgenogram and cardiac fluoroscopy, The Echocardiogram, ECG Exercise Testing, Cardiac Catheterization, Coronary Arteriography, Coronary Blood Flow and Pressure Measurements, Cardiac Ventriculography, Pulmonary Angiography, Angiography of the Aorta and Peripheral Vessels, Nuclear Cardiology, Computed tomography of the Heart, Magnetic resonance Imaging of the heart, Magnetic Resonance imaging of the Vascular System, Positron Emission Tomography for the noninvasive study and quantification of blood flow and metabolism in human cardiac diseases, long-term continuous electrocardiographic recordings, Signal Averaging techniques and measurement of Late Potentials, Techniques of Electrophysiologic evaluation of Brady and tachyarrhythmias, Coronary Intravascular, Ultrasound Imaging endomyocardial biopsy etc.

B. INTERVENTIONAL CARDIOLOGY

Percutaneous Coronary Interventions, Coronary Angioplasty, Atherectomy, Atheroablation and Thrombectomy, Coronary Stenting, Balloon Valvuloplasty, Peripheral Intervention, Pediatric interventions, Intraaortic Balloon, Counterpulsation and other Circulatory Assist Device, Interventional Electrophysiology, Cardiac pacemakers, Implantable devices for heart failure and for the treatment of cardiac arrhythmias etc.

C. CARDIAC INSTRUMENTATION

Principles of cardiac instrumentation, pressure recording, ECG Machines, Cardiac Monitors, Defibrillators, Cath-Lab Equipment, EP Lab Equipment, Gamma Camera, CT Scan, MRI Equipment, PET Scans, Echocardiography including

Stress Echo, Colour Doppler and TEE, Pacemakers temporary and Permanent, ICDs, Triple Chamber Devices, radiofrequency ablation equipment, programmed stimulators IABP, Holter and Signal Averaging and ABP machines, Treadmill equipments, Hemodynamic recorders oximeters, Computers and image processing in Cardiology etc.

4. Fundamentals of Cardiovascular Disease:

Global Burden of Cardiovascular Disease, Heart Disease in Varied Populations, Economics and Cardiovascular Disease, Clinical Decision-Making in Cardiology, Measurement and Improvement of Quality of Cardiovascular Care, The Principles of Drug Therapy.

5. Molecular Biology.

6. The Cardiovascular History and Physical Examination.

7. The Electrocardiogram.

8. Choice of imaging technique.

9. Cardiac Ultra sound.

10. Cardiovascular Magnetic Resonance.

11. Cardiovascular Computed Tomography.

12. Nuclear Cardiology.

13. Psychological factors in heart disease.

14. Occupational and Regulatory Aspects of Heart Disease.

15. Non-cardiac Surgery in Cardiac Patients.

16. RESEARCH METHODOLOGY.

17. INDIAN MEDICAL COUNCIL (PROFESSIONAL CONDUCT, ETIQUETTE AND ETHICS) REGULATIONS, 2002.

18. CURRENT TRENDS AND RECENT ADVANCEMENTS IN THE FIELD OF CARDIOLOGY.