

STATE MEDICAL FACULTY OF WEST BENGAL

DETAILED SYLLABUS FOR ECG COURSE

PRELIMINARY EXAMINATIONS:

Paper I – Basic Anatomy, Physiology

Anatomy:

Structure and function of Cell in general, Structure and function of different Cells and tissues in the Cardiovascular System, Blood and Bone Marrow.

Basic Anatomy of the Heart and Lung. Basic Anatomy of the Circulatory System with emphasis on Systemic and Pulmonary Circulation. Basic Coronary anatomy and its importance in relation to Ischaemic Heart Disease

Anatomy of the Conduction System and natural Pacemaker.

Physiology:

Transport across Cell Membrane

Electrical Properties of Cell Membrane

Extracellular and Intracellular Fluid and Electrolytes

Acid Base Balance

Nerve-Muscle Physiology

Action Potential

Cardiac Cycle

Genesis of Electrocardiographic Waves

Basic Physiology of Respiration

Basics of Formed elements of Blood and haemopoietic system, Coagulation System

Basics of Lipid, Carbohydrate and Protein Metabolism-Basics of Atherosclerosis.

Coronary Thrombosis and Thrombolysis

Coronary Reperfusion and its assessment by ECG

Pulse, Blood Pressure, Central Venous Pressure

Basics of Central, Peripheral and Autonomic Nervous system.

Paper II – Elementary Physics in relation to ECG Technique

1. Elementary physics of Current Electricity, Electromagnetism, Galvanometer.
2. Einthoven’s Principle
3. Standard Leads and other different leads in relation to ECG, Holter, TMT and Cardiac Monitors.
4. Basic Principles of Cardiac Monitor
5. Structure and Function of ECG machine and Computerised ECG machine
6. Maintenance of ECG machine, ECG of patients with pacemakers-Role of magnet placement during ECG recording.
7. Steps of ECG Recording.
8. Pitfalls and errors in recording of ECG.

FINAL EXAMINATIONS:

Paper I – Cardiology

Basics of diseases of the Heart:

1. Rheumatic Fever and Rheumatic Heart Disease
2. Hypertension
3. Atherosclerosis and risk factors of Coronary Artery Disease
4. Ischaemic Heart Disease and Acute Coronary Syndrome
5. Heart Failure
6. Pericardial Diseases, Endocarditis, Cardiomyopathy
7. Conduction Disturbances, Tachy-arrhythmias and brady arrhythmias
8. Cardiac Pacemakers (Temporary and Permanent) and ICDs
9. Sensitivity and Specificity of ECG in diagnosis and treatment of cardiac diseases
10. ECG in Cath Lab

Paper II – Electrocardiograph, Maintenance of ECG machine etc. First Aid Management of cardiac emergencies

1. ECG in the context of different diseases of the heart
2. Cardio-Pulmonary Resuscitation-basic and advanced life care support
3. First hand Management of Cardiac Emergencies
4. Cardiac Defibrillator
5. TMT
6. Holter
7. Patient care in ICCU and role of ECG Technologists.
