

**Shahid Gangalal National Heart Centre
Bansbari, Kathmandu**

Syllabus for Registrar, Cardiology

Full Marks: 100

Pass marks: 40

Time: 2 Hours

Objective Questions: 25 x 2 = 50

Short Questions: 3 x 10 = 30

Long Question: 1 x 20 = 20

1. Clinical Cardiology – 20 marks
 - i. History taking and physical examination in cardiology
 - ii. History, physical examination, diagnosis, management and prognosis of following cardiovascular diseases and conditions
 1. Coronary artery disease
 2. Systemic hypertension
 3. Rheumatic fever and rheumatic heart disease
 4. Congenital heart disease
 5. Pulmonary arterial hypertension
 6. Cardiomyopathy
 7. Vascular diseases
 8. Tumors of heart
 9. Heart failure
 10. Arrhythmia
 11. Sudden cardiac death and cardiopulmonary resuscitation (CPR)
 12. Pericardial diseases
 13. Systemic diseases involving heart and blood vessels
 14. Non-cardiac surgery in heart patients
 15. Pregnancy in heart diseases
2. Epidemiology of cardiovascular diseases, preventive cardiology, cardiac rehabilitation and recent advances in cardiology – 20 marks
 - i. Epidemiology and worldwide burden of cardiovascular diseases
 - ii. Cardiovascular risk factors
 - iii. Primordial, primary and secondary prevention of coronary heart disease
 - iv. Prevention of congenital heart diseases
 - v. International and national prevention policies
 - vi. Major recent and landmark studies and trials in cardiology
 - vii. Cardiac rehabilitation: principles, rationale, recommendation and guidelines, practical implication of cardiac rehabilitation programs
3. Non-invasive Cardiology and imaging – 20 marks
 - i. Principles, technique, interpretation of Electrocardiogram (ECG)
 - ii. Chest X-ray in cardiovascular diseases
 - iii. Principles, indication, technique, interpretation of Holter monitoring
 - iv. Principles, indication, technique, interpretation of Ambulatory blood pressure monitoring
 - v. Techniques, exercise protocols, indication, contraindication, interpretation, limitations of Exercise ECG stress test

- vi. Echocardiography
 - 1. General principles
 - 2. Trans-thoracic echocardiography
 - 3. Three dimensional echocardiography
 - 4. Trans-esophageal echocardiography
 - 5. Principles of Doppler echocardiography
 - 6. Assessment and quantification of chambers
 - 7. Assessment and quantification of vascular lesions
 - 8. Assessment and quantification of LV/RV function
 - 9. Tissue Doppler, strain imaging and speckle tracking
 - 10. Contrast echocardiography
 - 11. Non-invasive estimation of pressure; volume and shunt lesions
 - 12. Assessment of myocardial ischemia and viability using echocardiography
 - 13. Echocardiography in emergency room
 - 14. Segmental approach in congenital heart disease
 - 15. General introduction of Fetal echocardiography
 - 16. Assessment of prosthetic valve by echocardiography
 - 17. Assessment of pericardial diseases by echocardiography
- vii. Nuclear cardiac Imaging: Types, indication, contraindications, interpretation clinical application
- viii. Cardiac CT: Indication, contraindication, interpretation, clinical application, use of CT coronary angiogram
- 4. Invasive cardiology / cardiac electrophysiology – 20 marks
 - i. Right and left heart catheterization: Indications, technique, interpretation
 - ii. Invasive hemodynamic assessment
 - iii. Coronary angiogram: Indication, contraindication, technique
 - iv. Coronary Intervention: Principles, indication, technique
 - v. Different types of coronary stents and principles of use
 - vi. Temporary pacemaker insertion: Indication, technique, complications
 - vii. Pericardio centesis: Indication, contraindication, technique
 - viii. Intervention in structural and congenital heart diseases
 - ix. Radiation hazard and protection
 - x. Complications in cardiac cath lab and their management
 - xi. Basics of intra-cardiac ECG
 - xii. General introduction to radiofrequency ablation
 - xiii. Pacemakers, ICD and CRT: General introduction and indications
- 5. Etiology, clinical features, diagnosis and management of the following (20 marks)
 - i. Respiratory diseases
 - ii. Diseases of GI tract
 - iii. Blood and lymphatic disorders
 - iv. Renal diseases
 - v. Endocrine and metabolic diseases
 - vi. Neurologic diseases
 - vii. Connective tissue disorders