

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

Syllabus for Registrar, Pediatric 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

Paediatric Cardiology Part: 80 Marks

1. Part 1

A. Development of Cardiovascular System:

- i. Development of myocardial structure and function.
- ii. Fetal and postnatal circulation.
- iii. Etiology of cardiovascular malformation.

2. Part 2

A. Evaluation of Cardiac patients:

- i. History taking and physical examination, ECG, chest roentgenography, Echocardiography, CT, Cardiac Catheterization and Angiocardiology.

3. Part 3

A. Pathology of Cardiovascular System:

- i. Cardiac anatomy.
- ii. Classification and terminology of cardiovascular anomalies.

4. Part 4

A. Chamber localization & Cardiac Malposition:

Chamber localization, Dextrocardia & Mesocardia.

5. Part 5

A. Congenital Heart Defects:

i. Left to right shunt lesions:

ASD, VSD, PDA, Atrioventricular Septal Defect, Aortopulmonary Window, Partial Anomalous Pulmonary Venous Connection.

ii. Obstructive lesions:

Pulmonary Stenosis, Aortic stenosis, Coarctation of aorta, Interrupted aortic arch.

iii. Cyanotic congenital heart diseases:

TOF, TOF with Pulmonary Atresia, TOF with absent Pulmonary Valve, Complete Transposition of Great Arteries, Corrected TGA, Total Anomalous Pulmonary Venous Connection, Tricuspid Atresia, Pulmonary Atresia with Intact Ventricular Septum, Ebstein's Anomaly, Persistent Truncus Arteriosus, Hypoplastic Left Heart Syndrome, Single Ventricle, Double Outlet Right Ventricle, Persistent Pulmonary Hypertension of the Newborn, Heterotaxia.

iv. Miscellaneous Congenital Cardiac Conditions:

Arteriovenous Fistula: Coronary, Pulmonary, Systemic.

Atrial Septal Aneurysm, Common Atrium, CorTriatriatum, Patent Foramen
Ovale , Cleft Mitral Valve, Parachute Mitral Valve.

6. Part 6

A. Acquired Heart Diseases:

i. Myocardial diseases:

HCM, DCM, RestrictiveCardiomyopathy,Noncompaction Cardiomyopathy,
Endomyocardialfibroelastosis ,Right Ventricular Dysplasia.

ii. Cardiovascular infection:

Infective Endocarditis, Myocarditis, Pericarditis, Constrictive Pericarditis, Kawasaki's disease.

iii. Acute Rheumatic Fever:

Prevalence, Etiology, Pathology, Clinical

Manifestation, Diagnosis, Clinical course, Management, Prognosis,
Prevention.

iv. Valvular Heart Diseases:

Mitral Stenosis, Mitral Regurgitation, Aortic Regurgitation, Aortic Stenosis.

v. Cardiac Tumours: Prevalence, Pathology, Clinical Manifestations, Treatment.

7. Part 7

A. Cardiovascular involvement in Systemic Diseases.

8. Part 8

A. Arrhythmias&Atrioventricular Conduction Disturbances:

i.Cardiac Arrhythmias:

ii. Disturbances of Atrioventricular Conduction.

iii. Cardiac Pacemakers & Implantable Cardioverter –Defibrillators in children.

9. Part 9

A. Special Problems:

Congestive Heart Failure, Pulmonary Hypertension, Systemic Hypertension,
Dyslipidemia in children, Child with Chest pain, Syncope, Palpitation, Sudden Cardiac Death,
Congenital and acquired problems of CoronaryArtery.

10. Part 10

A. Therapeutic Methods:

Pharmacological therapy, Intensive care, current topics in Congenital Heart Surgery, surgery of
Rheumatic Heart Disease, Therapeutic Percutaneous Intervention in Congenital and Rheumatic
Heart Diseases, Pediatric Heart Transplantation.

General Paediatric Part: 20 marks

1. Part 1

A. Normal growth and its disorder:

- i. Somatic Growth.
- ii. Assessment of physical growth and Disorders of growth.
- iii. Abnormalities of head size and shape.

2. Part 2

A. Development:

- i. Normal development.
- ii. Behavioral disorders.
- iii. Habit disorders and Tics.

3. Part 3

A. Adolescent Health and Development:

- i. Physical aspects.
- ii. Cognitive and social development.
- iii. Problems faced by adolescents.
- iv. Role of health care provider.

4. Part 4

A. Fluid and Electrolyte Disturbances:

- i. Composition of body fluids.
- ii. Deficit therapy.
- iii. Sodium, Potassium, Calcium and Magnesium.
- iv. Acid-Base disorders.

5. Part 5

A. Nutrition:

- i. Macronutrients.
- ii. Normal diet.
- iii. Undernutrition and management of Malnutrition.

6. Part 6

A. Micronutrients in Health and Disease:

- i. Fat soluble vitamins.
- ii. Water soluble vitamins.
- iii. Minerals and trace elements.

7. Part 7

A. Newborn infants:

- i. Resuscitation of a newborn.
- ii. Routine care, Thermal protection.
- iii. Fluid and electrolyte management.
- iv. Care of low birth weight babies.
- v. Infections in the Neonates.
- vi. Perinatal asphyxia, Respiratory distress.
- vii. Jaundice, Congenital malformations.
- viii. Followup of high risk neonates.

- ix. Metabolic disorders.
- xi. Effect of maternal conditions on fetus and neonates.

8. Part 8

A. Immunization and Immunodeficiency:

- i. Immunity.
- ii. Primary immunodeficiency disorders.
- iii. Immunization.
- iv. Commonly used vaccines, Vaccine administration.
- v. Immunization programs, immunization in special circumstances.

9. Part 9

A. Infections and Infestations:

- i. Fever.
- ii. Common viral infections.
- iii. Viral Hepatitis.
- iv. Human Immunodeficiency Virus(HIV)
- v. Common Bacterial Infections.
- vi. Tuberculosis.
- vii. Fungal infections, Protozoal infections.
- viii. Congenital and perinatal infections.
- ix. Helminthic infestations.

10. Part 10

A. Diseases of Gastrointestinal System and Liver:

- i. Gastrointestinal disorders.
- ii. Acute diarrhea, persistent diarrhea, chronic diarrhea.
- iii. Gastrointestinal bleeding.
- iv. Disorders of the hepatobiliary system.
- v. Acute viral hepatitis.
- vi. Liver failure, chronic liver disease.

11. Part 11

A. Hematological Disorders:

- i. Anaemia.
- ii. Approach to haemolytic anaemia.
- ii. Approach to a bleeding child.
- iii. Thrombotic disorders.
- iv. Leukocytosis, leucopenia.

12. Part 12

A. Disorders of Respiratory System:

- i. Common respiratory symptoms.
- ii. Investigations for respiratory illness.
- iii. Respiratory tract infections.
- iv. Acute lower respiratory tract infections.
- v. Bronchial Asthma, foreign body aspiration.

- vi. Lung abscess, Bronchiectasis.
- vii. Cystic fibrosis, Acute respiratory distress syndrome(ARDS)

13. Part 13

A. Disorders of Kidney and Urinary Tract:

- i. Renal anatomy and physiology.
- ii. Diagnostic evaluation.
- iii. Acute Glomerulonephritis, chronic Glomerulonephritis.
- iv. Nephrotic syndrome.
- v. Urinary tract infections.
- vi. Acute kidney injury.
- vii. Chronic kidney disease.
- viii. Disorders of renal tubular transport.
- ix. Congenital abnormalities of kidney and urinary tract.
- x. Cystic kidney diseases.

14. Part 14

A. Endocrine and Metabolic Disorders:

- i. Disorders of Pituitary gland, Thyroid gland, Adrenal glands.
- ii. Disorders of calcium metabolism.
- iii. Disorders of the gonadal hormones.
- iv. Obesity, Diabetes mellitus.

15. Part 15

A. Central Nervous System:

- i. Approach to neurological diagnosis.
- ii. Seizures, febrile convulsions, epilepsy, coma.
- iii. Acute bacterial meningitis, tubercular meningitis.
- iv. Encephalitis and encephalopathies.
- v. Intracranial space occupying lesions.
- vi. Subdural effusion, hydrocephalus.
- vii. Neural tube defects.
- viii. Acute hemiplegia of childhood, paraplegia and quadriplegia.
- ix. Ataxia, cerebral palsy, mental retardation, Neurocutaneous syndrome.

16. Part 16

A. Rheumatological Disorders:

- i. Arthritis.
- ii. Systemic Lupus Erythematosus.
- iii. Juvenile dermatomyositis.
- iv. Scleroderma.
- v. Mixed connective tissue diseases, vasculitis.

17 Part 17

A. Eye Disorders:

- i. Congenital and developmental abnormalities.

18. Part 18

A. Poisonings, Injuries and Accidents:

- i. Poisonings, common poisonings.

ii. Envenomation, injuries and accidents.

19. Part 19

A. Paediatric Critical Care:

- i. Assessment and monitoring of a seriously ill child.
- ii. Paediatric basic and advanced life support.
- iii. Shock, mechanical ventilation.
- iv. Nutrition in critically ill children.
- v. Sedation, analgesia and paralysis.
- vi. Nosocomial infection in PICU.
- vii. Transfusions.

20. Part 20

A. Common Medical Procedures:

- i. Obtaining blood specimens.
- ii. Nasogastric tube insertion.
- iii. Venous catheterization, arterial catheterization.
- iv. Lumbar puncture, thoracocentesis.
- v. Catheterization of bladder.

21. Part 21

A. Rational Drug Therapy:

22 Part 22

A. Integrated Management of Neonatal and Childhood Illnes:

- i. IMNCI strategy.
- ii. Outpatient management of young infants age upto 2 months.
- iii. Outpatient management of sick child age 2 month upto 5 years.
- iv. Revision in IMNCI guidelines.

23. Part 23

A. Rights and Children:

- i. Child abuse and neglect.
- ii. Adoption.