

SINGHANIA UNIVERSITY

PG Curriculum

Diploma in Pediatrics (PGDCH)

DURATION = 1 Year

A. Theory examination

Title Marks

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| Paper I Basic sciences as related to pediatrics | 100 |
| Paper II Principles and Practice of Pediatrics | 100 |
| Paper III Preventive & Social aspects of Pediatrics and Diseases of Neonates & Infants | 100 |

Total 300

B. Practical examination

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|---------------------------------|-----|
| 1. Long Case (1) | 100 |
| 2. Short Cases(2) 50 marks each | 100 |
| 3. Viva Voce | 100 |

Total 300

1. Syllabus

1.1 Theory

_ Approach to important clinical problems

_ Growth and development.

Short stature, obesity, precocious and delayed puberty, developmental delay, impaired learning.

_ Neonatology.

Normal newborn, low birth weight newborn, sick newborn.

_ Nutrition.

Lactation management and complementary feeding, protein energy malnutrition (underweight, wasting, stunting) and micronutrient and vitamin deficiency, failure to thrive.

_ Cardiovascular.

Murmur, cyanosis, congestive heart failure, systemic hypertension, arrhythmia, shock.

_ GIT and liver.

Acute, persistent and chronic diarrhea, abdominal pain and distension, ascites, vomiting, constipation, gastrointestinal bleeding, jaundice, hepatosplenomegaly and chronic liver disease, hepatic failure and encephalopathy.

_ Respiratory

Cough/chronic cough, noisy breathing, wheezy child, respiratory distress, hemoptysis.

_ Infections.

Acute onset, pyrexia with and without localizing sign, recurrent infections, nosocomial infections.

_ Renal

Hematuria/dysuria, bladder/bowel incontinence, voiding dys-functions, inguinoscrotal swelling, renal failure (acute and chronic).

_ Hematooncology.

Lymphadeno-pathy, anemia, bleeding.

_ Neurology.

Limping child, convulsions, abnormality of gait, intracranial space occupying lesion, paraplegia, quadriplegia, large head, small head, floppy infant, acute flaccid paralysis, cerebral palsy and other neuromotor disability, headache.

_ Endocrine.

Thyroid swelling, ambiguous genitalia, obesity, short stature.

_ Skin/Eye/ENT.

Skin rash, pigmentary lesions, pain/discharge from ear, hearing loss, epistaxis, refractory errors, blindness, cataract, eye discharge, redness, squint, proptosis.

_ Miscellaneous.

Habit disorders, hyperactivity and attention deficit syndrome, arthralgia, arthritis, multiple congenital anomalies. speech disorders.

_ **Disorders**

Definition, epidemiology, etiopathogenesis, presentation, complications, differential diagnosis, and treatment

_ Growth and development.

Principles of growth and development, normal growth and development in childhood and adolescence, deviations in growth and development, sexual maturation and its disturbances.

_ Neonatology.

Perinatal care, normal newborn, care in the labor room and resuscitation, low birth weight, prematurity, newborn feeding, respiratory distress, apnea, infections, jaundice, anemia and bleeding disorders, neurologic disorders, gastrointestinal disorders, renal disorders, malformations, thermoregulation and its disorders, understanding of perinatal medicine.

_ Nutrition.

Maternal nutritional disorders: impact on fetal outcome, nutrition for the low birth weight, breast feeding, infant feeding including complementary feeding, protein energy malnutrition, vitamin and mineral deficiencies, trace elements of nutritional importance, obesity, adolescent nutrition, nutritional management in diarrhea, nutritional management of systemic illnesses (celiac disease, hepatobiliary disorders, nephrotic syndrome), parenteral and enteral nutrition in neonates and children.

_ Cardiovascular.

Congenital heart diseases (cyanotic and acyanotic), rheumatic fever and rheumatic heart disease, infective endocarditis, arrhythmia, diseases of myocardium (cardiomyopathy, myocarditis), diseases of pericardium,

systemic hypertension, hyperlipidemia in children.

_ Respiratory.

Congenital and acquired disorders of nose, infections of upper respiratory tract, tonsils and adenoids, obstructive sleep apnea, congenital anomalies of lower respiratory tract, acute inflammatory upper airway obstruction, foreign body in larynx, trachea and bronchi, subglottic stenosis (acute and chronic), trauma to larynx, neoplasm of larynx and trachea, bronchitis, bronchiolitis, aspiration pneumonia, GER, acute pneumonia, recurrent and interstitial pneumonia, suppurative lung disease, atelectasis, lung cysts, emphysema and hyperinflation bronchial asthma, pulmonary edema, bronchiectasis, pleural effusion, pulmonary leaks, mediastinal mass.

_ Gastrointestinal and liver diseases.

Diseases of mouth, oral cavity and tongue, disorders of deglutition and esophagus, peptic ulcer disease, H. pylori infection, foreign body, congenital pyloric stenosis, intestinal obstruction, malabsorption syndrome, acute and chronic diarrhea, irritable bowel syndrome, ulcerative colitis, Hirschsprung's disease, anorectal malformations, liver disorders: hepatitis, hepatic failure, chronic liver disease, Wilson's disease, Budd-Chiari syndrome, metabolic diseases of liver, cirrhosis and portal hypertension.

_ Nephrologic disorders.

Acute and chronic glomerulonephritis, nephrotic syndrome, hemolytic uremic syndrome, urinary tract infection, VUR and renal scarring, renal involvement in systemic diseases, renal tubular disorders, congenital and hereditary renal disorders, renal and bladder stones, posterior ure-thral valves, hydronephrosis, voiding dysfunction, enuresis, undescended testis, Wilm's tumor, fluid-electrolyte disturbances.

_ Neurologic disorders.

Seizure and non seizure paroxysmal events, epilepsy and epileptic syndromes of childhood, meningitis (pyogenic and TBM), brain abscess, coma, acute encephalitis and febrile encephalopathies, Guillain-Barre syndrome, neurocysticercosis and other neuro-infestations, HIV encephalopathy, SSPE, cerebral palsy, neurometabolic disorders, mental retardation, learning disabilities, muscular dystrophies, acute flaccid paralysis and AFP surveillance, ataxia, movement disorders of childhood, CNS tumors,

malformations, Neurocutaneous syndrome, Neurodegenerative disorders, head injury

_ Hematology and oncology.

Deficiency anemia, hemolytic anemia, aplastic anemia, pancytopenia, disorders of hemostasis, thrombocytopenia, blood component therapy, transfusion related infections, bone marrow transplant/ stem cell transplant, acute and chronic leukemia, myelodysplastic syndrome, Hodgkin disease, non-Hodgkin's lymphoma, neuroblastoma, hypercoagulable states, transfusion related problems.

_ **Endocrinology.**

Hypopituitarism/hyperpituitarism, Diabetes insipidus, pubertal disorders, hypo

and hyperthyroidism, hypo- and hyperparathyroidism, adrenal insufficiency, Cushing's syndrome, adrenogenital syndromes, diabetes mellitus, hypoglycemia, short stature, failure to thrive, gonadal dysfunction and intersexuality, pubertal changes and gynecological disorders.

_ Infections.

Bacterial, viral, fungal, parasitic, rickettsial, mycoplasma, Pneumocystis carinii infections, chlamydia, protozoal and parasitic, tuberculosis, HIV, nosocomial infections, control of epidemics and infection prevention.

_ Emergency and critical care.

Emergency care of shock, cardiorespiratory arrest, respiratory failure, congestive cardiac failure, acute renal failure, status epilepticus, fluid and electrolyte disturbances and its therapy, acid-base disturbances, poisoning, accidents, scorpion and snake bites. Management of arrhythmia, ARDS, Hepatic encephalopathy, CRF, DKA, poisoning (including OPC) near drowning, status asthmaticus .

_ Immunology and rheumatology.

Arthritis (acute and chronic), connective tissue disorders, disorders of immunoglobulins, T and B cell disorders, immunodeficiency syndromes,

_ ENT.

Acute and chronic otitis media, conductive/sensorineural hearing loss, postdiphtheritic palatal palsy, acute/chronic tonsillitis/adenoids, allergic rhinitis/sinusitis, foreign body.

_ Skin diseases

Exanthematous illnesses, vascular lesions, pigment disorders, vesicobullous disorders, infections: pyogenic, fungal and parasitic; Steven-Johnson syndrome, eczema, seborrheic dermatitis, drug rash, urticaria, alopecia, ichthyosis.

_ Eye problems.

Refraction and accommodation, partial/total loss of vision, cataract, night blindness, chorio-retinitis, strabismus, conjunctival and corneal disorders, retinopathy of prematurity, retinoblastoma, optic atrophy, papilledema.

_ Behavioral and psychological disorders

Rumination, pica, enuresis, encopresis, sleep disorders, habit disorders, breath holding spells, anxiety disorders, mood disorders, temper tantrums, attention deficit hyperactivity disorder, autism.

_ Social pediatrics.

National health programs related to child health, child abuse and neglect, child labor, adoption, disability and rehabilitation, rights of the child, national policy of child health and population, juvenile delinquency.

_ Genetics.

Chromosomal disorders, single gene disorders, multifactorial/polygenic disorders, genetic diagnosis, and prenatal diagnosis, gene therapy and genetic counselling.

_ Orthopedics.

Major congenital orthopedic deformities, bone and joint infections: pyogenic,

tubercular, and common bone tumors.

_ Vaccine preventable diseases/all vaccines including newer vaccines.

_ Clinical

1.2 Practical

_ **History and examination.**

History taking including psychosocial history, environmental immunization history, physical examination including fundus examination, newborn examination, including gestation assessment; thermal protection of young infants, nutritional anthropometry and its assessment, assessment of growth, use of growth chart, SMR rating, developmental evaluation, communication with children, parents, health functionaries and social support groups; and genetic counseling.

_ **Bedside procedures**

_ Monitoring skills: Temperature recording, capillary blood sampling, arterial blood sampling.

_ Therapeutic skills: Hydrotherapy, nasogastric feeding, endotracheal intubation, cardiopulmonary resuscitation (pediatric and neonatal), administration of oxygen, venepuncture and establishment of vascular access, administration of fluids, blood, blood components, parenteral nutrition, intraosseous fluid administration, intrathecal administration of drugs, common dressings, abscess drainage and basic principles of rehabilitation.

_ Investigative skills: Lumbar puncture, ventricular tap, bone marrow aspiration and biopsy, pleural, peritoneal, pericardial and subdural tap, biopsy of liver and kidney, collection of urine for culture, urethral catheterization, suprapubic aspiration.

_ Bedside investigations.

Hemoglobin, TLC, ESR, peripheral smear staining and examination, urine: routine and microscopic examination, stool microscopy including hanging drop

preparation, examination of CSF and other body fluids, Gram stain, ZN stain, shake test on gastric aspirate.

_ Interpretation of

X-rays of chest, abdomen, bone and head; ECG; ABG findings; CT/MRI scan and other investigation relevant to Pediatrics.

_ Understanding of

common EEG patterns, audiograms, ultrasonographic abnormalities and isotope studies.

_ **Basic Sciences**

Embryogenesis of different organ systems especially heart, genitourinary system, gastrointestinal tract, applied anatomy of different organs, functions of kidney, liver, lungs, heart and endocrinal glands. Physiology of micturition and defecation, placental physiology, fetal and neonatal circulation, regulation of temperature (especially newborn), blood pressure, acid base balance, fluid electrolyte balance, calcium metabolism, vitamins and their functions,

hematopoiesis, hemostasis, bilirubin metabolism. Growth and development at different ages, puberty and its regulation, nutrition, normal requirements of various nutrients. Basic immunology, biostatistics, clinical epidemiology, ethical and medicolegal issues, teaching methodology and managerial skills, pharmacokinetics of commonly used drugs, microbial agents and their epidemiology.

2 Teaching Program

2.1. General Principles

Acquisition of practical competencies being the keystone of postgraduate medical education, postgraduate training should be skill oriented.

Learning in postgraduate program is essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are meant to supplement this core effort.

2.2. Teaching Sessions

- _ Clinical case discussions :
 - _ PG bed side
 - _ Teaching rounds
 - _ Mock Examination
 - _ Seminars/Journal club
 - _ Statistical meetings : weekly/monthly, clinico pathological meet
 - _ Mortality meetings
 - _ Perinatal meetings
 - _ Interdepartmental Meetings : Pediatric Surgery, Obstetrics, Skin, pathology, SPM, Pharmacology, Radiology
 - _ Others – Guest lectures/vertical seminars/Central Stat meets.

2.3. Teaching Schedule:

In addition to bedside teaching rounds in the department, there should be daily hourly sessions of formal teaching. The suggested teaching schedule is as follows:

- Journal club/Seminar alternate week Once a fortnight
- Seminar Once a fortnight
- Bed side case discussion Once a week
- Statistics and mortality meet (detailed discussion of all the deaths occurring in previous week) Once a week
- Statistics (including OPD, ward, nursery and PICU) Once a month
- Intradepartment meet to monitor progress by DCh residents for administrative training. Once a month
- Interdepartmental meet (cardiology, neurology, radiology, pharmacology, microbiology, statistics etc) Once a month
- Perinatology meet with department of Obstetrics and Gynae including statistics discussing any neonatal

death/topic

Once a month

Mock exam (bed side case is allotted 1 hour prior to presentation) on the pattern of University examination.

Once a week

Central session (CPC, guest lectures, integrated student seminars, grand round, sessions on basic sciences, biostatistics, research methodology, teaching methodology, health economics, medical ethics and legal issues).

Once monthly

Note:

- _ All sessions should be attended by the faculty members
- _ All teaching sessions should be assessed by the consultants at the end of session and marks are considered for internal assessment.

3. Assessment

All the PG residents will be assessed daily for their academic activities and also periodically.

3.1. General Principles

- _ The assessment is valid, objective, and reliable.
- _ It covers cognitive, psychomotor and affective domains.
- _ Formative, continuing and summative (final) assessment is also conducted in theory as well as practicals/clinicals. In addition, thesis is also assessed separately.

3.2. Formative Assessment

The formative assessment is continuous as well as end-of-term. The former is based on the feedback from the senior residents and the consultants concerned. End-of-term assessment is held at the end of each semester (upto the 5th semester). Formative assessment will not count towards pass/fail at the end of the program, but will provide feedback to the candidate.

3.3. Internal Assessment

The performance of the Postgraduate student during the training period should be monitored throughout the course and duly recorded in the log books as evidence of the ability and daily work of the student. Marks should be allotted out of 100 as followed.

3. Suggested Books and Journals

3.1. Books

- _ Nelson Text book of Pediatrics
- _ Avery Text book of Neonatology
- _ Care of Newborn Meharban Singh
- _ Cloherty – Manual of Neonatal Care
- _ IAP Text book of Pediatrics

4. Model Test Papers

**MODEL QUESTION PAPER
Diploma in Pediatrics (DCH)**

Paper-I

Basic Sciences in relation to Pediatrics

Max. Marks:100 Time: 3 hrs

Attempt ALL questions

Answer each question & its parts in SEQUENTIAL ORDER

ALL questions carry equal marks

Illustrate your answer with SUITABLE DIAGRAMS

1. Give various steps of thyroid hormone synthesis. Describe types of thyroid dysgenesis.
2. Describe the mechanism of thermogenesis in newborns.
3. Enumerate the 4 signs of good attachment of a baby at the breast. Discuss the advantages of breast milk over bovine milk.
4. Discuss the pathogenesis of typhoid fever. Explain the interpretation of the widal test.
5. Draw and describe structure of a renal tubule. Enumerate its functions.
6. Outline the mechanism of CSF formation and its circulation. Mention the various lesions involved in obstructive hydrocephalus.
7. What is the embryological basis of Tracheo - Esophageal Fistula? Enumerate the various types of Tracheo – Esophageal Fistula.
8. Discuss the pathogenesis of bronchial asthma.
9. Enumerate the causes of generalized oedema in a child and give the basic etiopathogenesis of each.
10. Mention the embryological basis of VSD. Describe the hemodynamics involved.

**MODEL QUESTION PAPER
Diploma in Pediatrics (DCH)**

Paper-II

Principles and Practice of Pediatrics

Max. Marks:100 Time: 3 hrs

Attempt ALL questions

Answer each question & its parts in SEQUENTIAL ORDER

ALL questions carry equal marks

Illustrate your answer with SUITABLE DIAGRAMS

1. Enumerate causes of Recurrent Abdominal Pain (RAP) in Children. How will you screen and Diagnose a case of Celiac Disease ?
2. Describe etiology, diagnosis & treatment protocol of a case of Aplastic Anemia in a child.
3. Give the International League of Association of Rheumatology (ILAR) classification of Juvenile Idiopathic Arthritis (JIA). Tabulate the differences between rheumatic and Rheumatoid Arthritis.

4. Enumerate the various neurocutaneous syndromes in children. Discuss the neuro imaging findings in each of them.
5. Discuss the differential diagnosis of an 8 year old child with sudden onset hemiplegia.
6. How would you investigate a child with failure to thrive?
7. Describe about the general principles of genetic counselling
8. Discuss the management of frequent relapsing Nephrotic Syndrome.
9. Describe the complications of enteric fever.
10. Discuss the management of a cyanotic spell.

MODEL QUESTION PAPER
Diploma in Pediatrics (DCH)
Paper-III

Preventive & Social aspects of Pediatrics and Diseases of Neonates & Infants

Max. Marks:100 Time: 3 hrs

- Attempt ALL questions**
 - Answer each question & its parts in SEQUENTIAL ORDER**
 - ALL questions carry equal marks**
 - Illustrate your answer with SUITABLE DIAGRAMS**
1. Describe various components of bio-physical profile
 2. Enumerate the four questions to be asked to self while receiving a baby at birth. How would you manage in case there is "NO" to any of these?
 3. Give the composition of surfactant. Describe the various preventive strategies for Hyaline Membrane Disease (HMD).
 4. Describe the timings and dosages of various nutritional supplements in LBW babies.
 5. Give the treatment protocol for a neonate with Patent Ductus Arteriosus (PDA).
 6. Mention the modified Bell's staging for necrotizing enterocolitis (NEC). Give the treatment guidelines of each of them.
 7. Give the algorithm for diagnosis of neonatal cholestasis. Tabulate the differences between Extrahepatic Biliary Atresia (EHBA) and Neonatal Hepatitis.
 8. Mention the definition and types of apnea in new born. How will you treat a baby with apnea of prematurity?
 9. Enumerate the goals of Reproductive and Child Health (RCH) and the package of services offered by this for children and mothers.
 10. Give Acute Flaccid Paralysis (AFP) case classification flow chart. How will you Collect, store & transfer stool sample in a case of AFP?