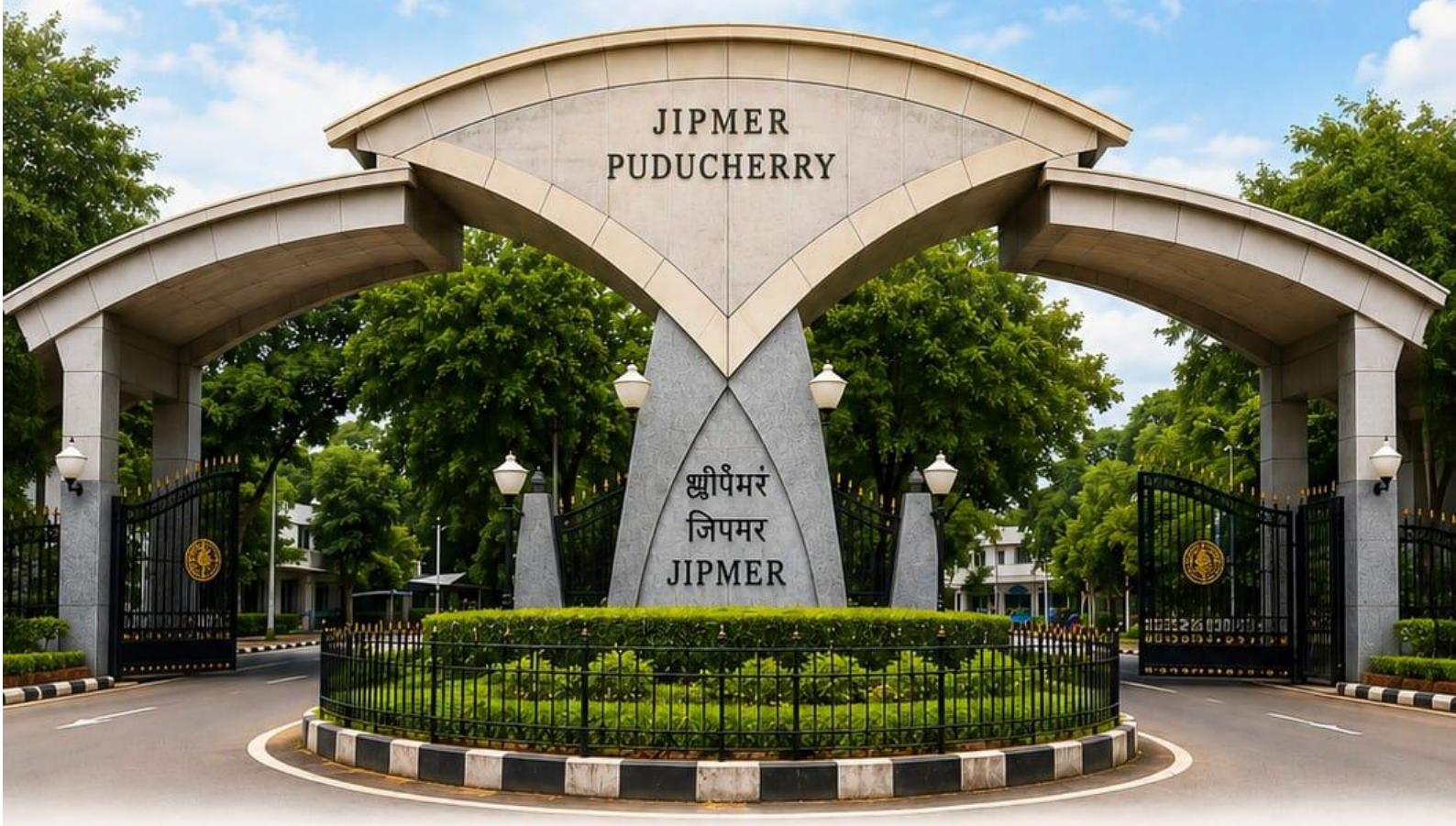
CURRICULUM

POSTGRADUATE

MD Paediatrics

From July 2026 session



JAWAHARLAL INSTITUTE OF POSTGRADUATE MEDICAL EDUCATION AND RESEARCH (JIPMER),
PUDUCHERRY – 605 006.

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This curriculum was approved at the 19th meeting of the Standing Academic Committee held on 28th January 2026 and ratified at the 22nd meeting of the Governing Body and will be applicable for students joining MD Paediatrics from the July 2026 session.

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GOAL OF THE COURSE

The goals of the M.D. course in Paediatrics are directed towards developing a competent paediatrician who:

(i) Appreciates and recognizes the health needs of infants, children, and adolescents and carries out professional obligations in keeping with principles of National Health Policy and professional ethics;

(ii) Has acquired the clinical competencies pertaining to delivery of appropriate, cost-effective, quality paediatric health care- preventive, promotive, curative, and rehabilitative- activities that are required to be practiced in the community and at all levels of the health care system;

(iii) Has acquired skills in effectively communicating with the child and the community;

(iv) Has acquired teaching and training skills in educating medical and paramedical professionals

(v) Appreciates the need and keeps updating the knowledge and skills pertaining to contemporary advances and developments in medical sciences as related to child health;

(vi) Has developed a scientific temper and is oriented to principles of research methodology and clinical epidemiology

TERMINOLOGY

Key-capabilities in student

1. They refer to the practices carried out by the specialists as part of their professional services.
2. They represent the services required from them, by patients, students, other medical/paramedical staff or society in general.
3. Thus, they refer to the specific tasks that the postgraduate will be expected to do after he completes the course.
4. For the purpose of training, the tasks are broken down into units that have distinct cognitive concepts, unless they are predominantly procedural, or attitude-based.

Core ideas in practice of Key-capabilities

They refer to the ideas that underlie the practice of the specialists. They include ideas and concepts about structure and functioning of organs and organ systems in health and diseases, classification of diseases, equipment, tests, drugs etc.

COURSE CONTENT:

1. Key-capabilities (details in Annexure 1(Part A))
2. Core ideas in the practice of key-capabilities (details in Annexure 1(Part B))
3. Peripheral Postings (details in Annexure 1(Part C))

LEARNING RESOURCES

(Suggested Books/ Online Resources)

A) Books (latest edition):

1. Nelson's Textbook of Paediatrics, Kliegman et al (Editors) – 22nd edition
2. Paediatric cardiology for practitioners, Park MK- 7th edition
3. Nada's Paediatric Cardiology, Kaene, 3rd edition
4. Paediatric Nephrology, Srivastava RN, Bagga A- 7th edition
5. P.G. Textbook of Paediatrics, IAP P Gupta et al (Editors)- 3rd edition
6. Clinical Methods in Paediatrics, Piyush Gupta- 6th edition
7. Nathan and Oski's Haematology of Infancy and Childhood, Nathan DG, Orkin SH- 8th edition
8. Paediatric Neurology: Principles and Practice, Swaiman B, Kenneth F, Ashwal S- 7th edition
9. The development of the infant and young child. Normal and abnormal, IlIingworth RS -11th edition
10. Essential Paediatrics, Ghai OP, Gupta P, Paul VK- 10th edition
11. The Harriet Lane Handbook, Siberry GK, Iannone R – 24th edition
12. Rudolph's Paediatrics, Rudolph AM, Hoffman JIE – 24th edition
13. IAP guidebook on Immunization 2022, ACVIP- 4th edition
14. Nutrition and child development, KE Elizabeth – 7th edition
15. Standard treatment guidelines by IAP-1st edition
16. Avery‟s diseases of the newborn-11th edition
17. Cloherty and Stark‟s Manual of Neonatal Care
18. Care of the newborn-Meharban Singh – 9th edition
19. NICU protocols of JIPMER- 3rd edition
20. Neonatal equipment, Ashok K Deorari, Vinod K Paul- 6th edition
21. Redbook on infectious diseases - 33rd edition
22. Growth and Development by Mukherjee and Nair- 1st edition
23. Fenichel‟s Clinical Paediatric Neurology- 9th edition
24. Handbook of Paediatric Physical and Clinical Diagnosis" by Lewis A. Barness and Enid Gilbert-Barness is the 8th edition

B) Online source:

1. Up-to-date,
2. Clinical Key

C) Journals

International:

a) JAMA - https://jamanetwork.com/journals/jamapediatrics
b) Lancet - https://www.thelancet.com
c) Paediatrics -https://publications.aap.org/paediatrics
d) Archives of disease in childhood- https://adc.bmj.com
e) Paediatrics and Child Health - https://www.paediatricsandchildhealthjournal.co.uk
f) Journal of Paediatrics
g) New England Journal of Medicine

Journals Indian:

a) Indian Paediatrics - https://www.indianpediatrics.net
b) Indian Journal of Paediatrics- https://www.ijppediatricsindia.in

EDUCATIONAL STRATEGY

A. General Principles

i) Acquisition of practical competencies being the keystone of postgraduate medical education, postgraduate training should be skills-oriented.

ii) Learning in a postgraduate program should be essentially self-directed and primarily emanate from clinical and academic work. The formal sessions are merely meant to supplement this core effort.

B. First semester Orientation program

Upon joining the Paediatric department, new postgraduates will undergo a comprehensive orientation program covering:

- Departmental policies and expectations
- Curriculum overview and training schedule
- Clinical rotations and postings
- Research and academic expectations
- Assessment and evaluation methods
-Available support services and resources

The orientation program will include the following modules:

Modules	Teaching Area	Topic
Module 1	Outpatient care	Approach to a child with Fever (Common causes) Approach to a child with Respiratory Symptoms, Approach to a child with G.I. symptoms (common)
		Identification of a sick child.
Module 2	Inpatient Care	Writing Orders, Continuous Infusions and Maintenance Fluid Therapy. Commonly Used Drug Doses
Module 3	General Paediatrics I	Developmental assessment and Red flag signs
Module 4	General Paediatrics II	History Taking and Anthropometry
Module 5	Paediatric Emergency I	Triage and Initial Stabilization, Identification and treatment of different types of shock,
Module 7	Paediatric Emergency II	Oxygen delivery
		Status Epilepticus Treatment
Module 8	Paediatric Emergency III	Common dyselectrolytemias and their management: Hypokalemia, Hyperkalemia, Hyponatremia, Hypernatremia and Hypocalcaemia
Module 9	Paediatric Intensive Care I	Operation of equipment -Multichannel Monitor, Infusion pumps, and radiant warmer. Hand hygiene and HAI prevention
Module 10	Paediatric Intensive Care II	Initial stabilization of a child with raised ICP
Module 11	Neonatology	Common Neonatal Issues- Management Neonatal jaundice, Hypothermia, Hypoglycaemia and Seizures Identification of a sick neonate
Module 12	Procedure &Sedation	Pre and Post procedural Precautions and Monitoring (Imaging, Bone marrow, Liver and renal biopsies), Sedation in paediatrics
Module 13	Relationship	Parents Counselling and Interpersonal Relationship Dealing with difficult parents, peers and seniors
Module 14	Study Resources	Online and offline Study Resources, General Guidance for basic 3-year training and beyond

C. Formal Teaching Sessions

i) Common Teaching Sessions for all Postgraduate

The paediatric postgraduate teaching program mandates a minimum of 5 hours of formal teaching per week, in addition to routine bedside teaching rounds, totalling 20 hours per month of structured academic activity. To meet this requirement, the department must select a mix of various learning sessions as outlined below:

Session	**Frequency**	**Hours per month**
Journal Club	Once a month	1 (In addition, one more journal club is mandatory in the unit-wise teaching program)
Student Seminar	Once a month	1
Case Presentation	Twice in a week	8
Health care review	Twice a month	2
Interdepartmental discussion	Once a month	1
Faculty lecture (including research methodology and biostatistics)	Once a month	1
Guest Lecture (Faculty from other departments/institutions)/Inter-departmental discussion	Once a month	1
Interesting case presentation	Twice a month	2
Neonatology session	Twice a month	2
Institute academic meeting (JIPMER Scientific Society meeting)	Once a month	1
Total teaching session (hours)		20

ii) Unit-wise teaching sessions :

All the general paediatric units, PICU and NICU will have their own individual teaching sessions

D. Additional teaching sessions:

In addition to the above, postgraduates will participate in the following activities:

i. PALS and NALS Training: Complete basic Paediatric Life Support at the end of their first semester, and PALS (Paediatric Advanced Life Support) and NALS (Neonatal Advanced Life Support by the end of their second semester. and) training before the end of second

semester.

ii. Presentation of their dissertation: Present the dissertation protocol to the PGRMC (PG Research Monitoring Committee) during the first semester. Update dissertation progress every six months in departmental meetings, and present the final dissertation in the departmental meeting after submission at the end of the 5th semester.
iii. Research Workshops: Every resident has to mandatorily attend two research workshops, conducted by the "Medical Education Unit" of JIPMER
First semester: Before preparing the
dissertation protocol Fifth semester:
Before completing the dissertation
iv. Undergraduate Teaching: Each resident has to mandatorily take a minimum of two clinical classes for undergraduate MBBS students during the 5th and 6th semesters under faculty supervision. Assessment marks and feedback will be entered in the logbook.

E. Posting within Department

The postgraduate residents will be posted in different workplaces of the department on rotation at frequent intervals throughout the course. He/she will achieve the objectives of the posting in all these workplaces.

Neonatology	6 months
PICU/Emergency	6 months
General Paediatrics, including sub-speciality clinics (unit- wise postings on rotation). This includes one month posting in the Hemato-oncology day care and one month posting in the Child Development Clinic	22 months
Child psychiatry	1 months

F. Peripheral Postings

Postgraduate residents will undergo the following peripheral postings:

Rural/Urban Health Centre: 15 days, under the Preventive and Social Medicine department Medical Oncology Department: 15 days

Note: Postings in other departments may be arranged based on available resources, when there is a need and as decided by the department.

The concerned department in-charge faculty will:
-Sign the logbook assessment
-Send attendance records (number of days present/absent) to the Paediatric department at the end of the posting

G. Logbook Maintenance

All post-graduates must maintain a logbook throughout their training period, documenting:
- Rotations and postings
- Procedures performed (with assistance and independently)
- Difficult cases managed
- Academic activities (departmental, institute, and outside)
- Publications
- Leave details

The logbook must be completed to be eligible for the final exam.
Logbook Contents:

- Consolidated record of procedures (Annexure II)
  - Date-wise entries certified by the faculty
- Detailed work-up of selected cases (2 cases/month)

Academic activities:

- Departmental seminars
- Journal club presentations
- Conferences attended (national/international)
- Papers presented/published

- Co-scholastic activities (Annexure 3 sample forms)
- Peripheral postings: Feedback forms/score sheets from faculties

Dissertation

- A research project should be undertaken and dissertation must be submitted as per Postgraduate Research Monitoring Committee (PGRMC) guidelines of JIPMER.
- Two hard copies of the dissertation, prepared from the research project, should be submitted to the Dean (Academics) JIPMER, at two and half years of the course to become eligible to appear for the final examination at the end of the course, as per the guidelines of JIPMER.
- Six monthly interim presentations of the dissertations will be done to monitor the progress of the research work and take corrective measures when faced with difficulties.

Please refer to Postgraduate Dissertation Regulations and Postgraduate Examination Regulations document for further details

WORKPLACE OBSERVATION

Workplace observation form: Records day-to-day activities and learning
Logbook assessment at pre-decided time instances

Personal Attribute Assessment:

Faculty will assess and record the following attributes of the residents in the logbook:

- Availability: Punctual, available continuously on duty, responds promptly to calls, and takes proper permission for leave.
- Sincerity and motivation: Dependable, honest, admits mistakes, does not falsify information, exhibits good moral values, loyal to the institution, has initiative, takes on responsibilities, goes beyond routine work, exhibits keen desire to learn.
- Diligence and performance: Dedicated, hardworking, does not shirk duties, leaves no work pending, competent in clinical case workup and management, skilled in procedures, proficient in record keeping and file work.
- Academic ability: Intelligent, shows sound knowledge and skills, participates adequately in academic activities, and performs well in oral presentation and departmental tests.
- Interpersonal skills: Has a compassionate attitude towards patients, gets on well with colleagues and paramedical staff.

ASSESSMENT

Marks

Exam	Marks	Description
Theory exit examination	400 marks	This is the written exam at the end of the course. Four theory examination papers as given in the curriculum document of the course.
Practical exit exam	400 marks	This is the practical examination at the end of the course. The detailed scheme is given in the curriculum document of the course.
Internal Assessment	Internal assessment Theory: 50 marks	Two exams should be conducted - one at the end of first year and the other at the end of second year. Portions for the examination and pattern of the examination must be notified to the students at least one month in advance. The pattern of the internal assessment test will be similar to one paper of the theory exit examination. Two faculty members will evaluate the paper of each candidate in a blinded manner and the average of the 2 scores will be taken as the final score for the internal assessment. If a resident misses one of the tests due to medical reasons (medical certificate from a faculty member of the treating department and duly forwarded by the HoD to the Dean (Academic)), he/she can be permitted to appear in the test that is held for the next batch 6 months later. This can be permitted only once in the course period. If a resident does not attend an internal assessment test, or if he/she fails to attend the rescheduled test due to medical reasons, the score will be considered as 0 for the test. No retests or re-evaluation will be permitted under any circumstances. The internal assessment marks should be communicated to the students within two months of conducting the exams. Internal assessment test marks will be added to the final aggregate to the tune of 100 marks (theory and practical). There is no cut off of internal assessment test scores for determining eligibility to appear in the exit examination or to decide pass/fail solely based on the internal assessment test scores. However, when a student secures less than 50%

Exam	Marks	Description
		marks in the internal assessment or when any concern is formally raised by the student with the Dean office, a review board with at least 3 faculty members should be constituted to review the student's performance with the student, recommend appropriate remedial measures, document the remedial plan, and submit a signed copy of the document to the Dean's Office. Additional periodic assessments can be held as part of formative assessment. Scores of these tests will not be considered for internal assessment and will not be considered for replacing scores of any of the internal assessment tests. Information to be provided to the Dean Office, before the final examination. 1. Dates of internal assessment examinations conducted 2. Names of faculty members involved in assessment against each date 3. Marks obtained by students in theory, practical and workplace-based observation in each exam session 4. Internal assessment marks for each student for Theory, Practical and Workplace based assessment. An average of the two theory and practical tests will be used to calculate scores for 50 and 25 marks respectively. Cumulative workplace-based assessment scores will be determined for 25 marks. 5. Copy of review documentations for periods of low performance of a student, if any, with remedial measures suggested by the departmental committee.
Internal Assessment (Practical and Workplace-based assessment)	Internal assessment Practical: 25 marks Internal assessment	For practical examinations, all members of the faculty of the department, from Assistant Professor to the senior-most faculty, shall participate in internal assessment on a rotating basis. The assessment shall be planned such that multiple faculty members are engaged for each student and different faculty members are engaged for the two assessments, wherever feasible. The pattern prescribed in the curriculum document shall be followed for practical assessments and the score shall be adjusted for 25 marks. Workplace-based assessment marks are given based on practice of the profession and affective

Exam	Marks	Description
	Workplace-based assessment: 25 marks	domain attributes in the workplace and in the learning environment. Workplace observation proforma should be provided to students at the time of joining the department. The method of workplace observation should be explained to the students at the beginning of the course.
Dissertation	100 marks	Dissertation marks will be calculated by the average of the scores provided by 2 external examiners. Approval of the dissertation with more than 50% scores awarded by the external examiners will be one of the eligibility criteria for appearing for the exit examination of the discipline.
Total	1000 marks	**Criteria for PASS:** 1. (a) A candidate will need to pass the final Theory Exit Exam and Practical Exit Exam independently. (b) A minimum of 50% marks in 'Theory Exit exam' (a minimum of 40% in each of the four papers) and 50% in 'Practical Exit exam' separately shall be mandatory 2. A candidate should also score 50% or above in the final aggregate marks (500 out of 1000) to pass in the degree course. If a student secures a pass score in theory and practical examination but fails in the aggregate score, he/she can re-appear in the exit examination of the subsequent session. There is no provision to improve internal assessment or dissertation scores.
Please refer to Postgraduate Examination Regulations document for further details		

Syllabus for Exams

The Internal Examination syllabus may be subject to revision based on academic requirements.

Syllabus for the Internal Assessment:

Semester I -Growth and development, behavioural disorder, nutrition, immunization, infectious disease, biostatistics

Semester II-Respiratory system, gastroenterology, hepatology and neurology Semester III-Neonatology, emergencies, nephrology and endocrinology

Semester IV- Hematology, haemato-oncology, immunology, genetics, behavioural and psychological adolescent health disorders, social and preventive paediatrics and other specialities

Semester V-Whole syllabus

Theory Exit Exam

There will be four papers, and the syllabus for each paper is as follows:
Paper 1: Basic sciences as applied to Paediatrics

Paper 2: Neonatology and community Paediatrics

Paper 3: General paediatrics, including advances in Paediatrics relating to Cluster I specialities*

Paper 4: General paediatrics including advances in Paediatrics relating to Cluster II specialities**

*Cluster I – Nutrition, growth and development, immunization, infectious disease, genetics, immunology, rheumatology, psychiatry and behavioural sciences, skin, eye, ENT, adolescent health, critical care, accidents and poisoning.

**Cluster II – Neurology and disabilities, nephrology, haematology, oncology, endocrinology, gastroenterology, hepatology, respiratory and cardiovascular disorders.

Practical Exit Exam

Practical examinations will be conducted by two external and two internal examiners. The practical examination consists of two parts: Case discussion and Oral/viva voce examination.

Case discussion: There will be one long case discussion for 150 marks, evaluated by all four examiners together. Additionally, there will be two short case discussions:one in General Paediatrics (other than the major system involved in the long case) and one in Neonatology, each for 75 marks. For the short cases, a pair of one internal and one external examiner will evaluate each case, with the examiners allocated differently for each case.

Oral/Viva voce examination: There will be four stations, each for 25 marks. The stations will cover the following areas:

Station 1: Radiology (X-rays, USG, CT and MRI), ECG and ABG

Station 2: Instruments (10 marks), Case scenarios in PICU, NICU & Emergency settings (15 marks)

Station 3: Drugs & Vaccines (15 marks), Counseling sessions (10 marks)

Station 4: Nutrition (10 marks), Logbook evaluation: 5 marks. Microteaching: 10 marks

The oral examination will be conducted by each examiner separately and will be comprehensive enough to test the postgraduate student's overall knowledge of the subject.

MODEL THEORY QUESTION PAPERS

Paper I

Basic Sciences as Applied to Paediatrics

Time: Three Hours **Maximum Marks:100**

Answer All Questions

1. a) Explain the role of insulin and counter-regulatory hormones in the maintenance of normal blood sugar levels during fasting and post-feeding.
   b) Explain the underlying principles of analysing the "critical blood sample" in the evaluation of unexplained hypoglycaemia.
   c) What are the causes of hypoglycaemia with absent ketones in the urine? (4+4+2)
2. a) Discuss the concept of Number Needed to Treat (NNT) while expressing the results of Randomised Controlled Trial (RCT)?
   b) If a new therapy decreases mortality of a serious condition from 30% to 25% compared to standard treatment in a Randomised Control Trial (RCT), calculate the Number Needed to Treat (NNT)?
   c) Explain Forest Plot and Funnel Plot used in meta-analysis with a schematic diagram. (2+2+6)
3. a) Briefly describe the interpretation of the Pulmonary Function Test in children.
   b) Explain with diagram: Volume Time Graph and Flow Volume Loop during spontaneous breathing in normal children, obstructive airway disease and restrictive lung disease. (5+5)
4. a) What are the different types of carbapenem resistance?
   b) Explain the role of rapid test for carbapenem resistance in the management of Carbapenem Resistant Enterobacteriaceae (CRE)?
   c) Outline the infection control measures for proven CRE infection in the PICU. (3+3+4)
5. a) Explain with a schematic diagram the normal development of foetal gut and the physiological rotation of the gut.
   b) Mention the deviations in t h e development of t h e gut leading to malrotation, gastroschisis and exomphalos. (4+6)
6. a) Explain the importance of the interpretation of peripheral smear in clinical practice.
   b) Describe schistocytes, spherocytes, target cells and Heinz bodies with diagrams and enumerate the conditions in which they are seen. (4+6)
7. Describe the stages of embryonic brain development with appropriate diagrams and discuss the antenatal factors that adversely influence brain development. (6+4)
8. Enumerate the differences in the composition of total body water at various ages and discuss its implications. Tabulate the differences in electrolyte composition between ECF and ICF. (5+5)
9. Describe the various stages of lung development with a mention of various congenital malformations that can occur at each stage of development. Discuss the various postnatal factors that can adversely influence lung development. (5+5)
10. Define anion gap. What is the normal anion gap in children? Discuss the role of anion gap in the evaluation of acid-base disorders in children with examples. Mention the role of the kidneys in the regulation of acid-base balance. (5+5)

Paper II

Neonatology and Community Paediatrics

Time: Three Hours **Maximum Marks:100**

Answer ALL Questions

1.a) A 12-hour-old neonate was referred to a tertiary care neonatal unit with oxygen saturation of 80% on free-flow oxygen. Discuss the differential diagnosis.

b) How do you manage persistent pulmonary hypertension in the newborn?

2.a) What is the current neonatal and perinatal mortality rate in India? List the factors contributing to perinatal mortality in India.

b) Discuss the steps taken by the Government of India to reduce PMR.

3.Describe the classification, complications and management of hypothermia in the neonate.

4.What are the complications encountered in an Infant of a Diabetic mother (IDM) in the neonatal period? Discuss the management of an IDM.

5.Discuss the algorithmic approach and management of a baby with neonatal cholestasis.

6.Describe the role of the paediatrician in adoption of a child in the Indian scenario.

7.Describe the postnatal evaluation of a neonate with antenatally detected hydronephrosis. What are the management options available for these babies?

8.A primi mother aged 25 years is expected to deliver at 29 weeks of gestation. How will you organize the delivery room care, NICU care and post-discharge follow-up care for this neonate?

9.When do you suspect intrauterine infection in a neonate? Describe the laboratory diagnosis of common intrauterine infections. Outline the management of any one of them.

10.Outline the diagnostic approach in a bleeding neonate. Describe the management of any three common conditions.

Paper III

General Paediatrics including Recent Advances-Part I

(Cluster-I: Nutrition, growth and development, immunization, infectious disease, genetics, immunology, rheumatology, psychiatry and behavioural sciences, skin, eye, ENT, adolescent health, critical care, accidents and poisoning)

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions

1.How are CFTR mutations classified? Mention the approved novel therapies that are useful in each of the mutation classes. (5+5)

2.Briefly describe about gene editing technology and its role in management of rare diseases in children? Briefly mention the ethical issues that can arise out of this technology. (5+5)

3.What is syndrome-based surveillance for vaccine-preventable disease? Give two examples. Mention any three advantages and disadvantages of using syndromic surveillance platforms for vaccine-preventable disease surveillance. (2+2+6)

4.Discuss the utility of point-of-care testing in paediatric acute care settings. (10)

5.What is the Nurturing Care Framework for Early Childhood Development? Describe its components and strategies to implement it. (5+5)

6.Describe investigations and management of newly diagnosed diabetic ketoacidosis (DKA) in a child. Describe the plan of management after DKA is controlled. (5+5)

7.A 3-year-old girl weighing 13 kg is brought with complaints of ingestion of the entire bottle of paracetamol syrup 12 hours back. How will you evaluate and manage this child? (5+5)

8.A one-year-old child weighing 5 kg with a mid-upper-arm circumference of 11 cm was brought in with complaints of fever and diarrhoea. His pulse rate was 170/min with poor volume, blood pressure was 68/46, and capillary refill time was prolonged. How would you stabilise and manage this child? (10)

9.Briefly describe (4+6)

a)Red flags in child development which indicate the need for further Assessment.

b)Modalities of early stimulation therapy.

10.Briefly describe

a)Diagnosis of erythema multiforme major and its management.

b)Clinical features, investigations and management of intussusception (5+5)

Paper IV

General Paediatrics including Recent Advances-Part II

(Cluster- II : Neurology and disabilities, nephrology, haematology, oncology, endocrinology, gastroenterology, hepatology, respiratory and cardiovascular disorders.

Time: Three Hours **Maximum Marks:100**

Answer All Questions

1.Define refractory status epilepticus. Discuss the various management options for

refractory status epilepticus in children. (3+7)

2.An 8-year-old girl is referred to your institution for complaints of 'not gaining height.' Discuss the differential diagnosis, investigation and management of short stature in this child. (3+4+3)

3.A four-year-old child, who was treated by Kasai procedure for extra-hepatic biliary atresia at the age of 2.5 months, presents to you now with two episodes of melena and firm hepatomegaly. Discuss the evaluation and management of this child. (5+5)

4.Briefly outline the approach to a six-month-old infant with a urinary tract infection.

a)First episode

b)Recurrent episode (5+5)

5.Outline the approach to diagnosis and management of precocious puberty in a female child. (10)

6.What are the principles of management of Beta-Thalassemia major? Describe the chelating agents used in the management of Beta-Thalassemia major. Describe the antenatal diagnosis of Beta-Thalassemia major. (4+4+2)

7.Outline the algorithmic approach to a child with refractory rickets. Describe the management of refractory rickets. What is the role of Burosumab in the management of genetic forms of refractory rickets? (3+5+2)

8.Describe the pathophysiology and management of atypical haemolytic uremic syndrome in children. Discuss the role of eculizumab in atypical haemolytic uremic syndrome management. (3+5+2)

9.Define Drug-resistant epilepsy. Outline the management approach to a 4-year- old child with global developmental delay and drug-resistant epilepsy. (4+3+3)

10.Describe the clinical features, etiopathogenesis and management of autoimmune encephalitis with special reference to anti-NMDA receptor encephalitis.

Annexure I (Part A)

Key Competencies in the Practice of Paediatrics

They refer to the practices carried out by the specialities as part of their professional services. They represent the services required from them, by patients, students, other medical/paramedical staff or the society in general.
Thus, they refer to the specific tasks that the postgraduate will be expected to do after he completes the course.
For the purpose of training, the tasks are broken down into units that have distinct cognitive concepts, unless they are predominantly procedural, or attitude based.

Sl. No.	**Major Domain**	**Minimum expected performance at months**					
		6	**12**	**18**	**24**	**30**	**36**
I	Growth and development						
1	Anthropometry	3	4	5	5	5	5
2	Development surveillance	3	4	5	5	5	5
3	Development screening	3	4	5	5	5	5
4	Development assessment	-	-	1	2	3	3
5	Neurological examination of an infant	2	3	4	4	5	5
6	Neurological examination of a neonate	2	3	4	4	5	5
7	Autism spectrum disorder screening test	1	2	3	4	5	5
8	Diagnosis of Autism Spectrum Disorder	1	1	2	3	4	4
9	Child behaviour screening	1	2	3	4	5	5
10	Early stimulation for high-risk neonates	-	1	2	3	4	4
11	Basic Early Intervention in the first year of life	-	-	1	2	3	3
12	Assessment of a child with global developmental delay/cerebral palsy	-	1	2	3	4	5
13	Counselling parents of children with	-	-	2	3	4	4

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	special needs						
14	Nutritional rehabilitation of a child	-	1	2	3	4	5
	with cerebral palsy						
II	Nutrition						
1	Knows the general classification of the various nutrients and the importance of	1	1	1	5	5	5
	each of the nutrients in children‟s health						
2	Knows the RDA (Recommended Daily Allowance) of proteins, calories, and important vitamins and minerals for Indian children as per the latest ICMR recommendations. Knows the protein and calorie values of the commonly used local food items as per the IFCT (Indian Food	1	4	5	5	5	5
	Composition Tables)-2017.						
3	Assesses children’s growth and interprets the same using the appropriate charts. Narrates the various factors affecting the	5	5	5	5	5	5
	growth.						
4	Knows the various benefits of human breast milk, the physiology of lactation and the possible problems in breastfeeding. Helps the mother to start breastfeeding soon after birth, and	1	2	4	5	5	5
	counsels & supports the mothers expressing difficulty in breastfeeding.						
5	Narrates the basic requirements for	-	-	1	1	1	1

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	the establishment and functioning of human						
	breast milk banking						
6	Narrates the principles of complementary feeding, and counsels the mother regarding simple	3	4	5	5	5	5
	home-based age-appropriate complementary foods. Knows the harms of junk foods and						
	counsels the parents regarding the same.						
7	Identifies the vitamin and mineral deficiencies on clinical examination; orders for relevant investigations & interprets the reports, and manages them. Also, counsels the parents and children	2	3	4	4	4	4
	regarding the relevant diet.						
8	Identifies various under-nutritional syndromes such as severe acute malnutrition, moderate acute malnutrition, marasmus, and kwashiorkor, and manages	1	2	3	4	5	5
	them. Also, prepares a diet chart keeping the socioeconomic status of the families.						
9	Identifies a child with failure to thrive,	1	2	3	4	5	5
	plans the necessary work-up to identify the cause, and manages them						
10	Identifies a child with overweight and obesity, plans the necessary work-up to identify the underlying causes & complications and treats them. Prepares a diet and physical exercise chart for an overweight	1	2	3	4	4	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	/obese child and counsels the						
	parents & children accordingly.						
11	Narrates the various indications for total and partial parenteral nutrition, describes the basics of preparation & administration, prepares a plan for an individual child, administers them and monitors for	-	-	1	2	3	3
	complications.						
12	Prepares the diet plan for children with various chronic organic diseases involving the liver, pancreas, intestine, kidney, heart	-	1	2	3	4	5
	& brain, and counsels the parents regarding the same						
13	Has up-to-date knowledge about the importance of probiotics and prebiotics in children‟s health and uses them in the care	1	1	2	3	4	5
	of the children as required						
14	Has knowledge about the various national programs targeting childhood nutrition, and finds ways to implement the same in	1	2	3	4	5	5
	the care of children						
15	Knows the importance of childhood nutrition in meeting sustained development goals and practices the same	1	1	5	5	5	5
	in the care of children						
16	Diagnoses Severe Acute Malnutrition based on the latest WHO criterion, its complications, plans appropriate investigations and manages accordingly; also prepares an individual diet plan keeping in	2	3	3	4	4	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	mind the socio-economic status						
	of the mother and counsels, the mother regarding the same						
17	Diagnoses obesity based on the standard (WHO and IAP guidelines), suspects the probable cause for obesity based on the history and clinical examination (including syndromic and monogenic obesity), orders appropriate investigations and plans management. Screens the child for associated comorbidities and counsels the parents about the same. Prepares an individual diet plan and counsels the parents about the same; informs the parents and child about the harm of unhealthy JUNCS foods. Suggests age-	2	3	4	4	4	5
	appropriate aerobic physical activities.						
III	Immunization						
1	Prescribes and administers age-appropriate routine vaccination in normal children and children with special situations (such as bleeding tendency, on immunosuppressive drugs/anticoagulants/immunoglobulin, HIV infected, congenital immunodeficiency, lapsed immunization);	3	4	4	4	5	5
	counselling the mothers about the						
	importance of each of the vaccinations administered						
2	Manages the adverse events noted	1	2	3	3	4	4
	following immunization						
3	Ensures proper cold chain practices	1	3	4	4	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	are followed from storage to administration,						
	maintaining vaccine efficacy and safety."						
4	Interacts smoothly with other residents, nurses and other workers involved in running immunization clinic and performs	2	3	4	4	5	5
	as a team member						
5	Manages the animal bite wounds appropriately; prepares the necessary immunization plan and administers them	1	2	3	4	5	-
6	Knows the indications, dose, and schedule for the optional vaccines (other than those given under the National Immunization Program) in special conditions (such as planned for splenectomy, cochlear implant); counsels the parents and	-	1	2	3	3	3
	administers them						
7	Screens all children attending Immunization clinic for growth and development: Assesses the growth, plots the same in the growth charts (according to their gestational age) and interprets the same.	1	3	4	4	5	5
	Assesses the development using the appropriate red flags.						
	Counsels the parents regarding their child‟s growth and development.						
	Counsels the parents on the age-appropriate healthy nutrition						
IV	Respiratory System						
1	Performing the respiratory system examination, arriving at a reasonable	3	3	4	4	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	provisional diagnosis, ordering for necessary						
	investigations and confirming the diagnosis						
2	Recognition of pleural effusion and	1	2	3	4	4	5
	performing aspiration for diagnostic/therapeutic purposes						
3	Recognition of the need for intercostal tube drainage and performs the same	1	2	3	4	4	5
4	Recognition the need for nebulization,	3	3	4	4	5	5
	selects the drugs with its dosages and administers them appropriately						
5	Recognition of the need for oxygen therapy, choose the appropriate oxygen delivering device and its flow rate based on the	3	4	4	4	5	5
	clinical condition, and the age of the child.						
6	Setting up HFNC/CPAP for appropriate	2	3	3	4	4	5
	indications						
7	Recognition of the need of endotracheal intubation, necessary preparation, and performing the same	2	2	3	3	4	5
8	Connecting the child to a mechanical ventilator and configuring the appropriate	1	2	3	3	4	5
	ventilation settings to support their respiratory needs.						
9	Assessment of lung function using spirometry with its interpretation	1	2	3	3	4	4

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
10	Performs chest physiotherapy, and teaches the parents as necessary	1	2	3	3	4	4
11	Outpatient management of common respiratory conditions: common cold,	2	3	4	4	5	5
	pharyngitis, otitis media, and rhinosinusitis						
12	Management of common Paediatric Respiratory Emergencies-Moderate to Severe Bronchiolitis, severe pneumonia, moderate to severe asthma exacerbation, foreign body airway, acute epiglottitis,	1	2	3	3	4	4
	acute laryngotracheobronchitis, tension pneumothorax						
13	Management and follow up of chronic respiratory conditions- CF Bronchiectasis, Non-CF Bronchiectasis, PCD, Pulmonary Tuberculosis, Asthma and Allergic Rhino sinusitis, Interstitial lung disease, chronic respiratory failure, medical management of congenital lung malformations, Patients	1	2	3	3	4	4
	on home oxygen and home ventilation						
14	Selects the age-appropriate inhalant device, teaches the parents and children about the correct technique, counsels about the proper	1	2	3	3	4	5
	use of them, and not to discontinue its use without doctors‟ advice						
15	Makes a dietary plan for children with cystic fibrosis and counsels the parents and children about the same. Decides on the pancreatic enzyme replacement therapy (PERT) and	1	1	2	2	3	4

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	adjusts its dose based on the signs of malabsorption as needed to						
	optimize the nutritional outcomes.						
16	Management of Empyema Thoracis (including intercostal tube insertion), sepsis-related complications.	2	3	4	5	5	5
V	Paediatric Haemato-oncology						
1	Identifies anemia, orders necessary investigations based on the history and clinical examination, interprets the reports, plans the acute as well as ongoing	2	3	4	4	4	5
	management.						
2	Counsels the parents on the diets in nutritional anemias	1	2	3	4	5	5
3	Identifies bleeding disorders including hemophilia, based on the history and clinical examination, orders for the necessary	1	2	3	4	5	5
	investigations & interprets them, plans the acute as well as ongoing management.						
4	Suspects Thalassemia major and other transfusion dependent anaemias based on the history & clinical examination, orders necessary investigations and plans acute as	1	2	3	4	5	5
	well as ongoing management						
5	Suspects other hemolytic anemias including autoimmune hemolytic anemia	1	2	3	4	5	5
	based on the history, clinical examination						
	and basic blood count reports.						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	Suggests the necessary investigations to confirm the diagnosis. Prepares plan for the acute as well as ongoing management of these						
	children in consultation with faculty.						
6	Suspects aplastic anemia and inherited bone marrow failure syndromes based on the history, clinical examination and basic blood count reports. Suggests the necessary investigations to confirm the diagnosis. Prepares plan for the acute as well as ongoing management of these	1	2	3	3	4	4
	children in consultation with faculty.						
7	Suspects histiocytic disorders/HLH Hemophagocytic Lymphohistiocytosis, based on history, clinical examination, plans for the necessary investigations to confirm the diagnosis. Prepares plan for the acute as well as ongoing management	1	1	2	2	3	3
	of these children in consultation with faculty						
8	Prepares the child and performs bone marrow procedure	1	1	2	3	4	5
9	Suspects Primary immune deficiency disorders based on history, clinical examination, and plans for the necessary investigations to confirm the diagnosis. Prepares plan for the acute as well as ongoing management of these children in	1	1	2	2	3	4
	consultation with faculty.						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
10	Suspects acute leukemias, and lymphomas based on history, clinical examination, and plans for the necessary investigations to confirm the diagnosis. Prepares plan for the acute as well as ongoing management of these children in consultation with	1	1	2	2	3	3
	Paediatrics and oncology faculty.						
11	Suspects solid malignancies including CNS malignancies, benign disorders of lymphoreticular system based on history, clinical examination, and plans for the necessary investigations to confirm the diagnosis. Prepares plan for the acute as well as ongoing management of these	1	1	2	2	3	3
	children in consultation with Paediatrics, oncology and nuclear medicine faculty.						
12	Assesses the need for blood products, immunoglobulin, coagulation factors, and other biologicals, determines dose requirements, and plans administration in	1	3	5	5	5	5
	collaboration with faculty, for current and ongoing treatment.						
13	Suspects thrombotic disorder, thrombophilia, venous thromboembolism based on history, clinical examination, and plans for the necessary investigations to confirm the diagnosis. Prepares plan for the acute as well as ongoing management of these children in consultation with	1	1	2	3	4	4

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	faculty.						
14	Suspects congenital and acquired platelet disorders based on history, clinical examination, and plans for the necessary investigations to confirm the diagnosis. Prepares plan for the acute as well as ongoing management of these children in	1	1	2	3	3	4
	consultation with faculty.						
VI	Cardiovascular system						
1	Clinically diagnoses acute rheumatic fever (including chorea) based on the history, clinical examination, orders for the necessary investigations and interprets them, prescribes appropriate treatment and the secondary prophylaxis. Counsels the parents regarding	2	3	4	5	5	5
	long-term follow-up.						
2	Clinically diagnoses acyanotic congenital heart diseases (including VSD, ASD, PDA, CoA, Pulmonary stenosis, etc.) based on the history, clinical examination, orders for the necessary investigations and interprets them, and prescribes appropriate treatment.	1	2	3	4	5	5
	Counsels the parents regarding long-term						
	follow-up. Identifies the need and refers for the cardiothoracic surgeon's opinion.						
3	Clinically diagnoses cyanotic congenital heart diseases (including TOF, TGA, Truncus arteriosus, tricuspid atresia, Ebstein‟s anomaly)	1	2	3	4	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	based on the history, clinical examination, orders for the necessary investigations and interprets them, and prescribes appropriate treatment.						
	Counsels the parents regarding long-term						
	follow-up. Identifies the need and refers for the cardiothoracic surgeon's opinion.						
4	Clinically diagnose the cardiac emergencies such as CCF, cardiac shock, cyanotic spell, duct-dependent lesions, and begin appropriate initial management in consultation with the Paediatric and cardiology	1	1	2	3	4	5
	faculty.						
5	Cardiac arrhythmias: Diagnose the cardiac rhythm abnormalities such as SVT, atrial fibrillation, VT, VF, various types of heart block, and begin appropriate initial management in consultation with the Paediatric	1	1	2	3	4	5
	and cardiology faculty.						
6	Clinically diagnose pulmonary hypertension, confirm with appropriate investigations and plan management in consultation with	1	1	2	3	4	5
	faculty.						
7	Clinically diagnoses infective endocarditis, orders necessary investigations, starts empirical antibiotics and modifies according	1	2	3	4	5	5
	to the culture and sensitivity report.						
8	Suspects myocarditis and	1	1	2	3	4	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	cardiomyopathies based on the history and clinical examination, orders for necessary investigations, and plans management in consultation with Paediatric and cardiology faculty.						
9	Suspects pericardial effusion based on the history and clinical examination, orders for necessary investigations, and plans management in consultation with Paediatric and cardiology faculty.	1	1	2	3	4	4
VII	Immunology and Rheumatic disease						
1	Understands the components and functions of the innate and adaptive immune system, including cellular and humoral immunity, cytokines, immunoglobulins, and	3	3	4	4	5	5
	complement.						
2	Demonstrates knowledge of the complement system, its components, pathways, and deficiencies, and applies this knowledge in	1	2	3	4	4	5
	clinical practice.						
3	Applies knowledge of HLA and immunogenetics in organ and stem cell transplantation, including GVHD prevention	1	2	3	3	3	3
	and management.						
4	Recognizes and manages hypersensitivity reactions, including understanding their types	3	3	4	4	4	4
	and clinical implications.						
5	Applies knowledge of blood group systems (ABO, Rh, and minor groups) in transfusion medicine, including management of	3	4	4	4	4	4

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	incompatibility reactions.						
6	Interprets and applies immunological	2	3	3	4	4	4
	assays in clinical practice.						
8	Suspects primary and secondary immune deficiencies based on the history and clinical examination; plans for necessary	1	2	3	3	4	4
	investigations and appropriate management in consultation with faculty						
9	Understands the clinical significance of autoantibodies in Paediatric patients.	1	2	3	3	4	4
10	Suspects autoimmune diseases such as SLE, JIA and similar diseases based on history,	2	3	4	4	5	5
	clinical examination, and plans for the						
	necessary investigations to confirm the diagnosis. Prepares plan for the acute as well as ongoing management of these						
	children in consultation with faculty.						
11	Understand the basics of cancer immunology	1	2	3	3	4	4
VIII	Renal and urinary tract disorders						
1	Nephrotic syndrome						
	a) To know diagnostic criteria for	4	4	5	5	5	5
	childhood nephrotic syndrome						
	b) To understand the investigations and management of childhood nephrotic syndrome (both steroid sensitive and	2	3	4	4	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	steroid resistant nephrotic syndrome)						
	c) To understand various methods of	3	3	4	4	5	5
	testing for proteinuria						
	d) To be able to classify nephrotic syndrome into different clinical phenotypes (steroid sensitive, steroid resistant, first episode, infrequently relapsing, frequently relapsing, steroid	3	3	4	4	5	5
	dependent)						
	e) To identify the complications (infectious, thrombotic, hypovolemia, acute kidney injury, steroid toxicity, etc) in	2	3	4	4	5	5
	nephrotic syndrome						
	f) To counsel parents regarding the clinical course of the disease, maintaining a urine protein diary at home, importance of regular follow up and compliance with	1	2	3	4	4	5
	drugs						
	g) To counsel parents regarding vaccinating these children (including pneumococcal vaccine and chickenpox	2	3	3	4	4	5
	vaccine)						
	h) To recognize indications for kidney	1	2	3	4	5	5
	biopsy in childhood nephrotic syndrome						
	i) To differentiate idiopathic nephrotic syndrome from secondary nephrotic	1	2	3	4	5	5
	syndrome (e. g. lupus)						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
2	Acute Nephritic syndrome						
	a) To know diagnostic criteria for acute	2	3	3	4	4	5
	nephritic syndrome						
	b) To promptly identify, investigate and	2	3	4	4	4	5
	manage post-streptococcal glomerulonephritis (PSGN)						
	c) To differentiate post-streptococcal glomerulonephritis from other causes of acute nephritic syndrome (e.g., IgA nephropathy, lupus nephritis, Membranoproliferative	2	3	3	3	4	5
	glomerulonephritis, IgA vasculitis etc)						
	d) To promptly identify Rapidly progressive glomerulonephritis and begin appropriate immunosuppressive therapy	1	2	3	4	4	5
	e) To manage complications in acute	1	2	3	4	4	5
	nephritic syndrome such as AKI,						
	hypertensive emergencies, hyperkalaemia						
	and fluid overload						
	f) To counsel parents with PSGN and	2	2	3	4	5	5
	other causes of acute nephritic syndrome						
3	Acute kidney injury						
	a) To define AKI as per KDIGO and	1	2	3	4	5	5
	pRIFLE criteria						
	b) To know various aetiologies of	2	2	3	4	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	AKI						
	c) To comprehend the algorithmic diagnostic approach to a child with AKI (prerenal, intrinsic renal, post renal) and provide appropriate management including	2	2	3	4	4	5
	fluid and electrolyte management						
	d) To manage complications in AKI such as hypertension, hypertensive emergencies, hyperkalaemia and fluid	1	2	3	4	4	5
	overload						
	e) To be able to order appropriate	1	2	3	4	5	5
	investigations to identify aetiology and complications in AKI						
	f) To identify indications for Kidney Replacement Therapy	1	2	3	4	5	5
	g) To be able to write prescription for acute peritoneal dialysis and perform the	1	2	3	4	5	5
	procedure						
	h) To understand strategies to prevent	1	2	3	4	5	5
	AKI						
	i) To be able to adjust drug dosing as	1	2	3	4	5	5
	per the estimated glomerular filtration rate						
4	Chronic Kidney Disease						
	a) To define CKD	1	1	2	3	4	4
	b) To know aetiology of CKD in	1	1	2	3	4	4
	children						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	c) To be able to stage children with	1	1	2	3	4	4
	CKD into stages 1-5						
	d) To know the complications in children with CKD and provide emergency	1	1	2	3	4	4
	management to these children						
	e) To know medical management of associated comorbidities in these children (Mineral bone disorder, anaemia, hypertension, metabolic acidosis,	1	1	2	3	4	4
	hypocalcaemia, hyperkalaemia)						
5	Urinary tract infection (UTI)						
	a) To define and promptly recognize	2	3	4	4	5	5
	UTI						
	b) To classify UTI into simple UTI, complicated UTI, recurrent UTI	2	3	4	4	5	5
	c) To know various techniques of sending samples for urine culture	2	3	4	4	5	5
	(mid-stream urine, suprapubic sample,						
	catheterization) and rationally interpret						
	urine culture						
	d) To provide rational antibiotic therapy	2	2	3	5	5	5
	for children with UTI						
	e) To identify underlying renal anomalies in children with UTI by	1	2	3	5	5	5
	appropriate investigations						
	f) To identify renal scarring on follow	1	2	3	5	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	up in children with UTI by appropriate investigations						
6	Hypertension						
	a) To define and classify hypertension as per American Academy of Paediatrics	1	2	3	4	4	5
	2017 guidelines						
	b) To understand various terms such as	1	2	3	4	4	5
	hypertensive urgency, hypertensive emergency						
	c) To know various aetiologies of hypertension in childhood (renal, renovascular, endocrine, vasculitis, coarctation of aorta, obesity, monogenic	1	2	3	4	4	5
	hypertension, etc)						
	d) To understand algorithm approach to	1	2	3	4	4	5
	a child with hypertension						
	e) To order appropriate investigations in	1	2	3	3	4	5
	children with hypertension						
	f) To prescribe rational	1	2	3	3	4	5
	anti-hypertensive therapy in different clinical situations						
7	Tubular disorders						
	a) To know the spectrum of tubular disorders in children (including distal renal tubular acidosis, Fanconi syndrome,	1	2	3	3	4	4
	Bartter syndrome, Gitelman syndrome)						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	b) To identify symptoms and signs of	1	2	3	3	4	4
	these disorders						
	c) To investigate and manage these	1				4	
	tubular disorders						
8	Haemolytic uremic syndrome (HUS)						
	a) To define HUS, infection-associated	1	2	3	3	4	5
	HUS and atypical HUS						
	b) To understand the pathophysiology of	1	2	3	3	4	5
	various forms of HUS						
	c) To know the investigations and	1	2	3	3	4	5
	management strategies in HUS						
9	Miscellaneous						
	a) To perform renal biopsy under supervision	1	2	3	3	4	5
	b) To know the etiological work-up of children with nephrocalcinosis and	1	2	3	3	4	4
	urolithiasis						
	c) To comprehend the postnatal	1	2	3	3	4	4
	evaluation of antenatally detected hydronephrosis						
	d) To know the algorithmic evaluation of	1	2	3	3	4	5
	a child with refractory rickets						
	e) To understand the algorithmic	1	2	3	3	4	4
	evaluation of a child with polyuria						
	f) To be familiar with the work-up of	1	2	3	3	4	4

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	a						
	child with cystic kidney disease						
	g) To know the spectrum of con genital	1	2	3	3	4	4
	anomalies of the kidney and urinary tract						
IX	Liver and gastrointestinal disorders						
1	Elicit relevant history and perform proper gastrointestinal (GI) & hepatobiliary systems examination and arrive at	4	4	5	5	5	5
	provisional diagnosis.						
2	Recognize children with disorders of the oral cavity and oesophagus and plan	3	4	5	5	5	5
	appropriate investigations.						
3	Promptly identify, investigate, and manage GI and Liver emergencies, including upper GI bleed, acute liver failure, hepatic encephalopathy, foreign bodies,	3	4	5	5	5	5
	pancreatitis, intestinal obstruction, intussusception, acute appendicitis etc.						
4	Recognize symptoms and signs of dehydration in acute gastroenteritis and manage appropriately, including the determination of volume and composition	4	4	5	5	5	5
	of intravenous fluids administration						
5	Identify and manage the spectrum of infections of the GIT and liver, including viral hepatitis, liver abscess, peritonitis, acute gastroenteritis, dysentery and	3	4	5	5	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	prescribe rational antibiotics when indicated.						
6	To comprehend the algorithmic approach and prepare a management plan for chronic disorders, including neonatal cholestasis, metabolic diseases of liver, chronic diarrhoea, disorders of malabsorption, chronic pancreatitis, and chronic liver disease and	2	3	3	4	4	5
	counsel the parents appropriately						
7	To identify the need for timely referral to the surgical department in surgical gastrointestinal emergencies, including	3	4	5	5	5	5
	intussusception, ileus, intestinal obstructions, oesophageal perforations etc.						
8	Management and counselling regarding appropriate nutrition in disorders like celiac disease, malabsorption disorders, chronic malnutrition, chronic diarrhoea, persistent diarrhoea, short bowel syndrome	3	4	5	5	5	5
	etc.						
9	Manage nutrition with nasogastric feeding	3	4	5	5	5	5
	when indicated						
10	To identify indications for liver biopsy,	2	3	3	3	3	4
	perform the procedure and recognize immediate complications						
11	To promptly recognize the indications for urgent endoscopy, including severe upper	3	4	5	5	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	GI bleeds, lithium battery ingestions etc.						
12	To identify the indications and candidates	2	3	4	5	5	5
	for endoscopy and coloscopy.						
13	To be familiar with the work-up and timely referral of children with surgical conditions, including anorectal malformations, haemorrhoids, rectal mucosal prolapse, Meckel diverticulum, Hirschsprung disease, ileus, adhesions,	2	3	4	5	5	5
	obstructions etc						
14	Diagnoses persistent /chronic diarrhea based on history and clinical examination, orders relevant investigations, and plans	2	2	3	4	5	5
	management, including a diet plan						
X	Genetic and metabolic disorders						
	Foundational Knowledge and Principles						
1	Understand Basic Genetic Principles: Explain the concepts of the cell cycle, cell division, functioning of DNA/RNA, and the	1	2	3	4	4	5
	mechanisms of epigenetics.						
2	Apply Mendelian Genetics: Understands Mendel's laws and identifies various patterns of inheritance (autosomal, X-linked, mitochondrial) through pedigree charting and analysis. Understands and applies the	1	2	3	4	5	5
	concept and implications of consanguinity,						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
3	Recognize, identify and manage Genetic disorders/ Rare diseases: Understands the concepts of pathophysiology of genomics, proteomics, metabolomics and their applications. Can apply classification, diagnosis, and principles of management for	-	1	2	2	3	3
	genetic/rare diseases						
4	Understand the mechanism of upcoming and future therapeutic modalities: Understand the clinical potential and basic principles of advanced genetic and biological therapies, such as Gene Therapy for monogenic	-	1	2	2	3	3
	disorders.						
	Clinical Genetics and Genetic counselling						
5	Recognize, describe and apply Human Phenotype Ontology (HPO) to Dysmorphology and Birth Defects: Classifies birth defects (malformations, disruptions, deformations) and understands their aetiology and inheritance patterns. Also recognize the key features of common dysmorphic syndromes and participate in the plan of their management and short- and	-	-	1	2	3	4
	long-term follow-up, along with faculty						
6	Diagnose Chromosomal Abnormalities: Understand the classification of chromosomal abnormalities (numerical and structural); appropriately order and interpret diagnostic tests like Karyotype, FISH, and cell-free DNA	-	1	2	2	3	3

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	(cfDNA) testing, and independently manage the common chromosomal disorders,in consultation with						
	genetic specialist.						
7	Suspect, classify and order appropriate tests for genetic disorders related to different systems of the human body. Should be able to manage emergencies related to genetic disorders. Should be able to refer to appropriate centres with relevant facilities when required. Participate in developing management plans and short-term and long-term follow-up strategies for patients, in	-	1	2	2	3	3
	collaboration with faculty.						
8	Perform basic genetic counselling: Provide information regarding the condition of patient, tests required, explaining test results, anticipated complications, explaining familial and recurrence risks, treatment and reproductive options for locally prevalent and known genetic disorders, while following the ethical principles, under the supervision of a	-	1	2	2	3	3
	genetic specialist.						
9	Prenatal Screening and Diagnosis: Understands the indications and tests for prenatal screening and diagnosis. Has knowledge of PNDT (Prenatal Diagnostic Techniques) laws and regulations, including necessary forms and documentation	-	1	1	2	3	
	Ability to interpret test results and						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	provide						
	counseling to patients under faculty guidance						
	Skills related to current and newer genetic diagnostic tests						
10	Understands the principles of available genetic tests. Classify and Interpret Genetic Variants: Understands the different types of molecular variants. Knows the ACMG classification of variants and their application in clinical case management	-	1	1	2	2	3
	under the guidance of a genetic specialist.						
11	Select appropriate Molecular Tests and Interpret: Understand the indications and limitations of various molecular tests for diagnosing different types of mutations, and orders them under the supervision of a	-	1	1	1	2	3
	genetic specialist						
	Inborn Errors of Metabolism (IEMs) and Inborn Errors of Immunity (IEIs)						
12	Identify and Classify IEMs: Understand the pathophysiology and classification of IEMs (e.g., disorders of amino acid, organic acid, fatty acid oxidation, lysosomal storage etc.).	1	2	2	3	3	4
	Suspect and order basic tests for IEIs.						
13	Should be able to conduct bedside screening tests and order appropriate diagnostic tests.	-	1	2	2	3	3

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	Interprets the results and prepares a management plan under supervision.						
14	Manage Metabolic Crises: Should be able to suspect and manage acute metabolic crises independently in neonates/all Paediatric age- groups. Should understand the principles and plan management protocols under the	-	1	1	2	3	4
	guidance of the genetic specialist faculty.						
15	Long-Term management: Understand the principles of long-term management for the common IEMs and IEIs, including the role of specialized diets, drug supplements/ drug prophylaxis, stem cell therapy, enzyme replacement therapy, etc. and coordinate care with a genetic specialist.	-	1	1	2	2	3
	Inform families about the possibility of enrolling patients in newer clinical trials for						
	new drugs, or no specific treatment is available for the condition.						
15	Be aware of the software/ other resources available for syndrome identification,	-	1	1	2	2	3
	diagnostic algorithms etc.						
XI	Endocrinology						
1	Short stature						
	Orders for the appropriate X-ray, calculates	2	3	4	5	5	5
	the bone age and uses the same in						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	the management of short stature						
	Knows the algorithmic approach of short stature to arrive at a reasonable provisional	2	3	4	5	5	5
	diagnosis						
	Identifies the need for the growth hormone	1	2	3	4	5	5
	stimulation test, performs the same and interprets the results						
	Calculates the mid-parental height and uses	2	3	4	5	5	5
	it effectively in the analysis of the cause for short stature.						
	Knows the difference between familial and	2	3	4	5	5	5
	constitutional delay in short stature						
2	Diabetes in children						
	Type I Diabetes						
	Insulin therapy: knows the available types of insulins, and chooses the appropriate ones	1	2	3	4	5	5
	along with their dose and schedule						
	Management of Diabetes ketoacidosis: Diagnoses DKA based on the history and clinical presentation, orders for the relevant investigations, manages appropriately and	2	3	4	5	5	5
	prepares for a follow-up plan.						
	Diabetes education: Counsels the parents regarding insulin therapy, medical nutrition therapy, measures	1	1	2	3	4	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	to prevent hypoglycemia, and also when to suspect hypoglycemia and						
	manage the same; also counsels the parents regarding sick day management						
	Prepares follow-up program for monitoring for long-term complications of diabetes and	2	3	4	5	5	5
	counsels the parents regarding the same						
	Knows the mechanism of Insulin pump therapy and continuous glucose monitoring	-	-	1	2	3	3
	(CGM)						
	Other diabetic disorders						
	Suspects Type II diabetes, and monogenic diabetes based on history and clinical examination, orders for necessary investigations, and prepares a plan for	1	2	2	3	3	3
	management						
3	Thyroid disorders						
	Knows the interpretation of newborn thyroid	1	3	4	5	5	5
	screening reports and takes decision on the same						
	Suspects hypothyroidism based on the history and clinical features, orders for necessary investigations, and manages the	1	2	3	4	5	5
	same						
	Suspects autoimmune thyroiditis based on the history and clinical features, orders for necessary	1	2	3	4	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	investigations, and manages the						
	same						
4	Disorders of sex development (DSD)						
	Identifies a child with DSD, orders for	1	1	2	3	4	4
	necessary investigations, and prepares management under the guidance of faculty						
	Counsels the parents regarding "Gender of rearing" in a DSD child.	1	1	2	3	3	3
5	Pubertal disorders						
	Does Tanner SMR stage in an adolescent	3	4	5	5	5	5
	Identifies pubertal disorders, orders for necessary investigations &interprets the	1	2	3	4	5	5
	same, and prepares a plan for management						
6	Adrenal disorders						
	Identifies adrenal insufficiency, including Congenital adrenal hyperplasia in children based on the history and clinical examination, orders appropriate investigations and prepares a plan for	1	1	2	3	4	5
	management of adrenal crisis as well as long-term follow-up.						
7	Others						
	Suspects Diabetes insipidus, based on history and clinical examination, orders for necessary investigations and prepares a plan	1	1	2	2	3	4
	for the management						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	Suspects pituitary disorders, based on history and clinical examination, orders for necessary investigations, and prepares a	1	1	2	2	3	4
	plan for the management						
	Suspects parathyroid disorders, based on history and clinical examination, orders for necessary investigations and prepares a	1	2	3	4	5	5
	plan for the management						
	Suspects persistent hypoglycemia, based on history and clinical examination, orders for necessary investigations and prepares a plan	1	2	3	3	4	5
	for the management						
XII	Neonatology						
1	Advanced neonatal resuscitation, including positive pressure ventilation, chest	3	4	4	5	5	5
	compressions and medications.						
2	Assessment and initial management of respiratory distress in preterm and term	2	3	4	5	5	5
	infants.						
3	Thermoregulation of neonates and	3	4	5	5	5	5
	management of hypothermia.						
4	Antenatal counselling of parents for	1	2	3	3	4	4
	high-risk pregnancies.						
5	Assessment and management of common problems of preterm infants, including hypoglycemia, jaundice, etc.	2	3	4	4	5	5
6	Understanding preterm screening	2	3	3	4	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	protocols, including appropriate timing,						
	methods and interpretation of findings.						
7	Identification and management of neonatal	2	3	4	4	5	5
	jaundice, including cholestasis.						
8	Assessment and management of a	2	3	4	4	5	5
	neonate with apnoea.						
9	Assessment and management of neonates with suspected infections, including intrauterine infections, ventilator-	2	3	4	4	5	5
	associated pneumonia, central line-						
	associated bloodstream infections, and catheter-associated urinary tract infection prevention bundles and management of						
	sepsis.						
10	Neonatal mechanical ventilation	1	2	3	4	4	4
11	Identification and management of inborn	2	3	3	4	4	4
	errors of metabolism.						
12	Counselling of mothers regarding breastfeeding, kangaroo mother care, and troubleshooting common breastfeeding	2	3	4	4	5	5
	problems.						
13	Enteral and parenteral nutrition and growth monitoring of preterm and very low birth weight infants in the neonatal	2	3	4	4	5	5
	ICU.						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
14	Management of feed intolerance and	2	3	4	4	5	5
	necrotizing enterocolitis.						
15	Assessment and management of neonatal	2	3	4	4	5	5
	seizures and perinatal asphyxia.						
16	Identification and management of common renal anomalies and urinary tract	2	3	4	4	5	5
	infection.						
17	Discussing discharge plan with parents,	2	3	4	4	5	5
	explaining danger signs.						
XIII	Paediatric emergency						
1	Demonstrate the ability to recognize a	1	1	2	3	4	4
	sick child and triage them appropriately						
2	Demonstrate understanding of PALS	1	1	2	3	4	4
	algorithms and principles of resuscitation						
3	Performs cardio-pulmonary resuscitation as	1	2	3	4	5	5
	a team member and as a leader						
4	Demonstrate ability to perform	1	1	2	3	4	4
	resuscitation as per PALS						
5	Demonstrate the ability to begin	1	1	2	3	4	4
	appropriate initial management of common paediatric emergencies						
6	Demonstrate ability to secure intravenous	1	1	2	3	4	4

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	and intraosseous access						
7	Demonstrate ability to counsel parents	1	1	2	2	3	4
	regarding the status of a sick child						
8	Demonstrate ability to document the monitoring details of a sick child, appropriately interpret them and formulate	1	1	2	2	3	3
	a plan of management						
9	Demonstrate the ability to recognize their	1	1	1	1	1	1
	limitations and seek help at the appropriate time						
XIV	Paediatric critical care						
1	Demonstrate sound knowledge of	1	2	3	3	4	4
	principles of resuscitation and team work.						
2	Demonstrate knowledge of normal cardiovascular and respiratory physiology and manifestations of their disturbance	1	2	3	3	4	4
3	Demonstrate knowledge of maintenance of	1	2	3	3	4	4
	intracranial blood flow and mechanisms of raised intracranial pressure						
4	Demonstrate understanding of normal	1	2	3	3	4	4
	liver function and manifestations of liver dysfunction						
5	Demonstrate understanding of normal	1	2	3	3	4	4
	renal function and manifestations of						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	renal dysfunction						
6	Demonstrate understanding of normal	1	2	3	3	4	4
	coagulation function and manifestations of coagulation disturbances						
7	Demonstrate understanding of mechanisms of transmission of hospital	1	2	3	3	4	4
	acquired infections and the different ways to prevent them						
8	Demonstrate ability to secure central	1	2	3	4	4	5
	venous access						
9	Demonstrate ability to set and adjust basic	1	1	2	2	3	3
	ventilatory parameters based on clinical and blood gas evaluation						
10	Demonstrate ability to secure Peritoneal dialysis catheter and perform peritoneal	1	1	2	3	4	4
	dialysis						
11	Demonstrate ability to secure intercostal	1	1	2	3	4	4
	drain						
12	Demonstrate ability to counsel parents	1	1	2	2	3	4
	regarding the status of a sick child						
13	Demonstrate ability to document the	1	1	2	2	3	3
	monitoring details of a sick child,						
	appropriately interpret them and formulate						
	a plan of management						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
14	Demonstrate the ability to recognize their limitations and seek help at the appropriate	1	1	1	1	1	1
	time						
XV	Paediatric epilepsy and neurological disorders						
1	Elicit relevant history and perform proper	3	4	5	5	5	5
	central nervous system examination and localization of the lesion						
2	Recognition of children with disorders of the central nervous system and planning	3	4	5	5	5	5
	appropriate investigations.						
3	Promptly identify, investigate, manage and counselling neurological emergencies, including status epilepticus, coma/altered	3	4	4	5	5	5
	sensorium, stroke, head injury, meningitis, encephalitis, etc.						
4	Recognition of acute flaccid paralysis and performing the activities related to AFP surveillance.	4	4	5	5	5	5
5	Recognition of the need, choosing of appropriate anti-epileptic drugs, counseling the parents about the possible side effects, need for periodical follow-ups, and the need	3	4	4	5	5	5
	to continue the drug until such a decision has been taken by the doctors.						
6	Promptly identify, investigate, and management, counselling cerebral palsy,	3	4	5	5	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	neurometabolic neurodegenerative						
	disorders and neuromuscular disorders.						
7	To identify the need for timely referral to the neurosurgical department in neurosurgical emergencies, including head	3	4	5	5	5	5
	injury, hydrocephalus, etc.						
8	Promptly identify, investigate, manage and counselling of cranial nerve palsy, sensory abnormalities, ataxia, and involuntary	3	4	5	5	5	5
	movements.						
9	Fundus exam and interpretation of EEG,	3	3	4	4	5	5
	neuroimaging.						
10	Promptly identify, investigate, manage and	2	2	3	4	5	5
	counselling of space occupying lesions and tumours of central nervous system						
11	To identify indications for lumbar puncture, perform procedure, recognize	3	4	4	5	5	5
	immediate complications and manage them accordingly						
12	Able to do developmental screening and assessment including GMSCF assessment	3	3	4	4	5	5
	for motor disability.						
13	Brain death certification:						
	Perform a complete, age-appropriate neurological exam confirming deep coma, flaccidity,	-	1	2	3	4	4

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	and the complete absence of all brainstem reflexes (e.g.,						
	pupils, corneal, cough, gag, vestibular).						
	Has knowledge about the reversible confounders (e.g., hypotension, hypothermia, drug effect) are excluded or	-	1	2	3	4	4
	corrected before testing						
	Performs and interprets the apnoea test safely and accurately, confirming no respiratory effort at a target of $PaCO_2$	-	1	2	2	3	3
	≥60 mm Hg.						
	Identify indications for and interpret ancillary tests (e.g., EEG, cerebral blood flow) when clinical examination or apnea	-	1	2	3	3	3
	testing is incomplete or unreliable.						
	Communicates the diagnosis of death to the family with clarity, empathy, and cultural sensitivity, differentiating it from	-	1	2	2	3	3
	a vegetative state.						
	Counsels the family respectfully regarding the irreversible nature of the diagnosis and the option of organ	-	1	2	2	3	3
	donation according to legal and ethical guidelines.						
XVI	Adolescent Health Disorders						
1	Understands the pattern of physical growth during adolescence and the need for the	1	2	3	4	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	appropriate nutritional requirements						
2	Understands the hormonal changes	1	2	3	4	5	5
	during adolescence						
3	Assessment of Sexual Maturity using	1	2	3	4	5	5
	Tanner‟s staging						
4	Understands psychosocial development	1	2	3	4	4	5
	during adolescence and related problems						
5	Evaluation of delayed /precocious puberty	1	2	3	4	4	5
6	Assessment of adolescents' mental health and risk behaviors using HEADSS	1	2	3	4	4	5
	screening and appropriate counselling						
7	Management of psychosocial issues during adolescences	1	2	3	4	4	5
XVII	Child psychiatry disorders						
1	Recognition and management of common	1	2	3	4	4	5
	behavioural problems in normal children						
2	Assessment and management of a child	1	2	3	4	4	5
	with ADHD						
3	Assessment and management of a child	1	2	3	4	4	5
	with ASD						
4	Assessment and management of a	1	2	3	4	4	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	child						
	with intellectual disability						
5	Assessment and management of a child	1	2	3	4	4	5
	with anxiety and or depression						
6	Assessment and management of a child	1	2	3	4	4	5
	with specific learning disability						
XVIII	Bedside investigation and monitoring						
1	Complete blood count including ESR and	2	3	4	5	5	5
	Peripheral smear						
	a) To know how to prepare a smear						
	b) To know how to correctly view smear						
	under the microscope						
	c) To identify normal and abnormal						
	smear findings						
	d) To be able to perform ESR screening						
	test						
2	Urinalysis	3	4	5	5	5	5
	a) To know the correct method of urine collection						
	b) To be able to know how to centrifuge and prepare urine for microscopic						
	examination						
	c) To be able to perform and						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	interpret						
	urine dipstick						
	d) To be able to estimate degree of						
	proteinuria using sulfosalicylic acid						
	e) To be able to identify white blood						
	cells, red blood cells and RBC casts						
3	CSF examination	2	3	4	5	5	5
	a) To be able to prepare CSF for						
	cytological examination						
	b) To be able to identify white cells and						
	interpret CSF biochemistry						
4	Ascitic fluid examination	2	3	4	5	5	5
	a) To know the correct method of ascitic						
	tap						
	b) To be able to identify normal and						
	abnormal findings						
5	Blood sugar	4	5	5	5	5	5
	a) To be to use glucometer for bedside						
	glucose monitoring						
6	Pulse rate monitoring	4	5	5	5	5	5
	a) To know the ranges of normal heart						
	rates in various age groups						
	b) To be able to identify abnormal pulse						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	rate, pulse volume and character						
	c) To be able to identify feeble pulse						
	and manage appropriately						
7	Respiratory rate monitoring	4	5	5	5	5	5
	a) To know the age-wise cut-offs for						
	tachypnoea						
	b) To be able to identify abnormal rate,						
	and effort of breathing						
8	Non-invasive blood pressure (BP)	4	5	5	5	5	5
	monitoring						
	a) To know how to choose						
	age-appropriate BP cuff						
	b) To know the correct method to						
	measure BP in all limbs						
	c) To be able to interpret the observed values based on the standard						
	guidelines						
9	Saturation (spO2) monitoring	4	5	5	5	5	5
	a) To know the normal saturation and						
	identify any abnormal findings						
10	Electrocardiogram (ECG) monitoring	4	5	5	5	5	5
	a) To know the normal rhythm						
	b) To promptly identify abnormal rates, rhythms and findings specific to underlying disorders						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
XIX	Equipment Handling-Operation, trouble shooting and interpretation of						
	parameters of the following equipment						
1	Saturation probe	4	5	5	5	5	5
2	Multiparameter monitor	3	4	5	5	5	5
3	Defibrillator	3	4	5	5	5	5
4	Bedside ultrasound	1	2	2	3	4	4
5	CPAP/BiPAP machine	1	2	3	4	5	5
6	HFNC machine	1	2	3	4	5	5
7	Ventilator	1	2	3	3	4	5
XX	Infectious diseases						
1	Acute febrile illnesses: Takes appropriate history, performs a thorough clinical examination, reaches a reasonable provisional diagnosis, selects appropriate investigations & interprets them, and plans the necessary management. Also decides	3	4	5	5	5	5
	the need for inpatient admission						
2	TB: Continuously updates on the latest guidelines for the National TB Elimination Programme. Suspects childhood TB infections of various organs (Primary, Progressive Primary complex and Extra pulmonary TB, including lymph node TB, meningitis, tuberculoma and disseminated disease), based on the relevant history, clinical examination, orders for the necessary investigations and interprets them, prescribes the drugs	3	4	4	5	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	as per the current regimen (in consultation with the TB Medical officer), counsels the parents (about the possible side effects, the need to continue drugs until the course is completed, the need for periodical review, the need to screen the family members & close contacts), and suggests appropriate						
	preventive therapy.						
3	Diagnoses the (acute as well as chronic) common infections of bacteria, viruses, fungi and parasites of various systems in the body based on history and clinical examination, orders for necessary investigations and plans appropriate	2	4	4	5	5	5
	management.						
4	Suspects the presence of opportunistic infections in immunodeficiency states, healthcare-associated infections, device- related infections, including infections due to multidrug-resistant organisms, orders for the appropriate investigations and plans for	1	2	3	4	5	-
	management						
5	Manages infection-related emergencies: severe dehydration, septic shock, dengue shock syndrome, cerebral malaria, pneumonia with severe hypoxia, central nervous system infections, peritonitis, acute appendicitis, gas gangrene, acute pyogenic arthritis, cellulitis,	1	2	4	4	5	5
	and fasciitis						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
6	Knows the principles of antibiotic	1	2	4	4	5	5
	stewardship and its relevance in Paediatrice.						
7	Identifies and judiciously uses appropriate empiric and targeted antimicrobial therapy	3	4	5	5	5	5
	for Paediatric infections						
8	Apply infection control practices effectively,	1	2	4	4	5	5
	to prevent health care associated infections						
XXII	Parental Counselling and AETCOM (Attitude, Ethics, and Communication)						
1	Proficient enough in the local language to	2	3	4	4	5	5
	establish a good rapport with the parents						
2	Able to counsel parents for admission in	1	2	3	4	5	5
	OPD/ emergency based on the child‟s clinical status						
3	Able to explain the level of sickness in	1	2	3	4	5	5
	admitted children/ babies						
4	Knows the relevance of the tests being performed for the children and can explain	1	2	3	4	5	5
	the results						
5	Counsel parents coming to OPD for common health problems in „GALPAC‟ format (URI, Wheeze, anaemia, rickets,	1	2	3	4	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	diarrhoea, etc.)						
6	Explains danger signs related to all	1	2	4	4	5	5
	common illnesses, to the parents						
7	Knows and explains the treatment being	1	2	3	4	4	5
	given and plan until discharge for admitted children						
8	Knows details regarding when to	1	2	3	4	4	5
	follow-up and explains the parents about the same						
9	Writes appropriate discharge advice and	1	2	3	4	4	5
	explains the same to the parents						
10	Does clinical examination addresses ongoing problems and explain the health status of the baby in Follow-up visits in	1	2	3	4	4	5
	OPD						
11	Knows the socio-economic profile, education	1	2	3	4	4	5
	status, and family history details before counselling the parents						
12	Explain the health status of the baby, plan of management and progress of children admitted to NICU, PICU and Emergency	1	2	3	3	4	4
	(in GALPAC format)						
13	Establishes rapport with children and their parents						
	Displays interest/connection (eye contact, tone and body)	2	2	3	3	4	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	Greets them (introduces self and others, knows and uses patient name)	2	2	3	3	4	5
	Uses primarily open-ended questions (while eliciting initial details)	2	2	3	3	4	5
14	Communications with children and their parents						
	Actively explores child‟s and parents‟ understanding	2	2	3	3	4	5
	Non-judgmental: not blaming or criticizing parents and children	2	2	3	3	4	5
	Uses language the patient understands; avoids medical jargons.	2	2	3	3	4	5
	Confirms understanding by asking the parents to summarize	2	2	3	3	4	5
	Fully explains the rationale for tests/treatment	2	2	3	3	4	5
	Encourages and responds to questions	2	2	3	3	4	5
15	Breaking bad news						
	Preparation: knowledge, adequate settings, a plan for a time	1	2	3	3	4	5
	Follows protocol: SPIKES/BREAKS	1	2	3	3	4	5
	Maintains emotional boundary (without breaking down in front of the family or	1	2	3	4	4	5
	being too distant)						
	Informed consent procedure						
	Understands the need for informed consent before the procedures, uses the appropriate form in their local language, explains the procedure to the parents and caregivers, and	2	3	4	4	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	takes the consent						
	Medical ethics						
	Understand the fundamental principles of medical ethics: autonomy, beneficence, non-maleficence, and justice as applicable	1	2	3	4	5	5
	to Paediatric practice						
	Understands the relevance of the existing laws and regulations of child health (POCSO Act, Disabilities Act, MTP Act,	1	2	3	4	5	5
	Child Labour Act)						
	Demonstrates comprehensive knowledge and application of medicolegal laws and ethical guidelines governing Paediatric practice in India.	1	2	3	4	5	5
	Attitude, professional behaviour:						
	Demonstrates compassion, sensitivity and respect in family interactions	3	4	5	5	5	5
	Upholds honesty, integrity and	2	3	4	5	5	5
	accountability in clinical practice and documentation						
XXIII	Paediatric Procedures- Basic and advanced						
	Urine routine examination						
	a) To know the correct method of urine	3	4	5	5	5	5
	collection						
	b) To know how to centrifuge urine and	2	3	4	5	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	prepare it for microscopic examination						
	c) To be able to perform bedside urine dipstick assessment	3	4	5	5	5	5
	d) To be able to identify white blood	2	3	4	5	5	5
	cells, red blood cells and casts in urine						
	Peripheral smear examination						
	a) To know how to prepare a smear	3	4	5	5	5	5
	b) To know how to correctly view the	3	4	5	5	5	5
	prepared smear under a microscope						
	c) To be able to identify normal and	3	4	5	5	5	5
	abnormal smear findings						
	CSF cytology						
	a. To be able to prepare CSF for	2	3	4	5	5	5
	cytological examination						
	b. To be able to identify white cells and	2	3	4	5	5	5
	abnormal cells and interpret the CSF biochemistry						
	Blood gas analysis						
	a. To be able to perform venous and	2	3	4	5	5	5
	arterial blood gas analysis						
	b. To be able to interpret findings of a	2	3	4	5	5	5
	blood gas and institute appropriate corrective measures						
	IV cannula insertion						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	a) To be able to identify proper	3	4	5	5	5	5
	segments of vein for cannula insertion						
	b) To be able to secure the cannula	3	5	5	5	5	5
	safely						
	c) To be able to cannulate a neonate and young infant	2	3	4	5	5	5
	d) To be able to place an iv cannula in a	2	3	4	5	5	5
	child in shock						
	e) To be able to identify thrombophlebitis and remove cannula at	3	4	5	5	5	5
	the appropriate time						
	Foley's catheter insertion						
	a. To be able to place a foley‟s catheter	3	4	5	5	5	5
	b. To be able to identify immediate	3	4	5	5	5	5
	complications post foley‟s catheter insertion						
	NG tube insertion						
	a. To be able to know the procedure and	3	4	5	5	5	5
	place a NG tube correctly						
	b. To be able to identify immediate	3	4	5	5	5	5
	complications post NG tube insertion						
	Lumbar puncture						
	a. To be able to recognize when to do and	2	3	4	5	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	not do lumbar puncture						
	b. To be able to perform LP	1	2	3	4	5	5
	c. To be able to identify immediate	2	3	4	5	5	5
	complications post LP						
	Ascitic tap						
	a) To identify candidates for ascitic tap examination	2	3	4	5	5	5
	b) To be able to perform ascitic tap	1	2	3	4	5	5
	c) To be able to identify immediate	2	3	4	5	5	5
	complications post-ascitic tap						
	Pleural tap						
	a) To identify candidates for pleural tap	2	3	4	5	5	5
	examination						
	b) To be able to perform pleural tap	1	2	3	4	5	5
	c) To be able to identify immediate	2	3	4	5	5	5
	complications post pleural tap						
	Intra-osseous line insertion						
	a) To be able to place an intraosseous	1	2	3	4	4	5
	line and secure it safely						
	Bone marrow examination						
	a. To be able to recognize when to do and	2	3	4	5	5	5
	not do bone marrow examination						
	b. To be able to perform bone marrow	1	2	3	4	4	5
	c. To be able to identify immediate	2	3	4	5	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	complications post bone marrow						
	Umbilical catheter insertion						
	a. To be able to place an umbilical	1	1	2	3	4	5
	catheter						
	b. To be able to recognize immediate complications post umbilical catheter	1	2	3	4	5	5
	insertion						
	Endotracheal intubation						
	a. To be able to identify candidates for	2	3	4	5	5	5
	invasive ventilation						
	b. To be able to perform emergency rapid	1	2	3	3	4	5
	sequence intubation						
	c. To be able to check the position of ET	1	2	3	4	5	5
	tube and institute corrective measures if required						
	Central line insertion						
	a) To be able to identify appropriate	1	2	3	4	5	5
	vessel for inserting central line						
	b) To be able to place a central line	1	2	3	4	4	5
	c) To be able to identify immediate	1	2	3	4	5	5
	complications post central line insertion						
	Arterial line insertion						
	a) To be able to identify appropriate	1	2	3	4	5	5
	vessel for inserting arterial line						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	b) To be able to place an arterial line	1	2	3	4	4	5
	c) To be able to identify immediate	1	2	3	4	5	5
	complications post arterial line insertion						
	PICC line (peripherally inserted central						
	catheter) insertion						
	a. To be able to understand how to choose	1	2	3	4	5	5
	vessel for PICC line insertion						
	b. To be able to place a PICC line	1	1	2	2	3	4
	c. To be able to recognize immediate	1	2	3	4	5	5
	complications post PICC line insertion						
	Hemodialysis catheter insertion						
	a) To be able to identify appropriate	1	2	3	4	5	5
	vessel for inserting hemodialysis catheter						
	b) To be able to place a HD catheter	1	1	2	2	3	4
	c) To be able to identify immediate	1	2	3	4	5	5
	complications post HD catheter insertion						
	Peritoneal dialysis catheter insertion						
	a) To be able to place a stiff PD catheter	1	1	2	3	4	5
	b) To be able to place a soft PD catheter	1	1	2	2	3	4
	c) To be able to identify immediate	1	2	3	4	5	5
	complications post PD catheter insertion						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	VP Shunt/EVD tap						
	a. To identify candidates for shunt tap	2	3	4	5	5	5
	examination						
	b. To be able to perform shunt tap	1	2	3	4	5	5
	c. To be able to identify immediate	1	2	3	4	5	5
	complications post shunt tap						
	Chest tube insertion						
	a. To be able to recognize when to place	2	3	4	5	5	5
	intercostal drainage tube						
	b. To be able to place a chest tube bedside in emergency situations	1	2	3	3	4	4
	c. To be able to recognize immediate	1	2	3	4	5	5
	complications post chest tube insertion						
	Kidney biopsy						
	a. To identify candidates for a kidney	1	2	3	4	5	5
	biopsy						
	b. To be able to perform kidney biopsy	1	1	2	2	2	3
	c. To be able to recognize immediate	1	2	3	4	5	5
	complications post kidney biopsy						
	Liver biopsy						
	a. To identify candidates for a liver biopsy	1	2	3	4	5	5
	b. To be able to perform liver biopsy	2	3	3	3	3	4
	c. To be able to recognize immediate	1	2	3	4	5	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	complications post-liver biopsy						
	Rectal examination						
	To identify the need for rectal examination,	1	2	2	2	3	3
	perform the same and interpret the findings						
XXIV	Diseases of the Ear, Nose and Throat						
1	Recognizes the clinical features of a child with acute and chronic otitis media, uses the otoscope effectively in their diagnosis and	1	2	3	4	4	5
	manages appropriately						
2	Diagnoses acute/chronic tonsillitis/sinusitis	1	2	3	4	4	5
	and manage them appropriately						
3	Diagnoses allergic rhinitis based on the history and clinical features, and manages it	1	2	3	4	4	4
	appropriately						
4	Suspects hearing impairment based on the history, attempts to differentiate conductive/sensorineural hearing loss by clinical examination, looks for syndromic associations, orders for necessary investigations, and plans management in	1	2	2	3	4	4
	consultation with concerned specialists.						
5	Suspects foreign body aspiration based on the history and clinical examination, orders necessary investigations and plans management with concerned	1	2	2	3	3	4

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	specialists.						
	Does the necessary immediate management as and when necessary.						
XXV	Skin Diseases						
1	Exanthematous illnesses: Recognizes and	1	2	3	4	5	5
	treats common infectious exanthemas such as varicella, measles, scarlet fever, …						
2	Vascular lesions: Should be able to identify hemangiomas and perform a thorough systemic examination/investigation for	1	2	2	2	3	3
	hemangiomas of internal organs and plan						
	management accordingly						
3	Pigment disorders: To be able to identify the hypo or hyperpigmented lesions and treat common illnesses (eg: post-infectious hyperpigmentation) and look for underlying systemic disorders eg: neurocutaneous	1	2	2	2	3	3
	markers)						
4	Vesiculobullous disorders: to be able to identify and treat common causes of	1	2	2	3	3	4
	vesiculobullous lesions						
5	Identifies and treats common skin infections: pyogenic, fungal and parasitic	1	2	3	4	4	5
	infections						
6	Recognizes atopic dermatitis and	1	2	3	4	4	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	eczema						
	and refers them to dermatologist						
7	Identify the drug rash, including Stevens- Johnson syndrome, DRESS,… by history and clinical examination and plan acute and chronic management in consultation with	1	2	3	3	4	4
	the concerned specialist						
8	To manage urticaria and counsel regarding	1	2	3	4	4	5
	measures to prevent it						
XXVI	Eye diseases						
1	Uses ophthalmoscope effectively and identifies eye findings such as papilledema, cherry red spot, optic atrophy,… and uses it effectively in the diagnosis of the	1	2	3	4	4	5
	underlying systemic conditions						
2	Identifies common eye disorders- strabismus, nystagmus, cataract, attempts to identify their systemic associations and	1	2	2	3	3	4
	refers to an ophthalmologist						
3	Diagnoses infections of the conjunctiva and cornea and plans management in	1	2	3	4	4	5
	consultation with an ophthalmologist						
XXVII	Orthopaedics						
1	Diagnoses common orthopaedic conditions specific to children, such as CTEV, DDH, slipped capital femoral epiphysis, Legg- Calve-	1	2	3	4	4	4

Sl. No.	Major Domain	Minimum expected performance at months					
		6	12	18	24	30	36
	Perthe‟s disease, and plans management in consultation with						
	orthopaedic team						
2	Suspects fractures, joint dislocations, bone tumours, and infections of the joint and bone, orders for necessary investigations and plans management in consultation with	1	2	3	4	4	5
	orthopaedic team						
3	Suspects skeletal dysplasias, orders necessary investigations, and attempts to	1	2	3	3	4	4
	identify their systemic associations						
XXVIII	Poisoning						
1	Suspects poisoning based on the history and clinical examination, performs the appropriate first aid (including stomach wash) measures, and other necessary treatments (including administration of	1	2	3	4	5	5
	antidotes) as indicated						
XXIX	Research methodology and Biostatistics						
	Understanding the basic concepts						
1	Basic Biostatistics Terminology: Understand and explain concepts like mean, median, mode, standard deviation, variance, null hypothesis, p-value, confidence interval, statistical	1	2	3	4	5	5
	significance, and their clinical significance.						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
2	Types of Data and Variables: Identify and differentiate between various types of data (nominal, ordinal, interval, ratio) and variables (continuous, categorical) and	1	2	3	4	5	5
	recognize appropriate statistical tests for each.						
3	Probability and Distribution: Understand the basic concepts of probability and common distributions relevant to medical data (e.g.,	-	1	2	3	4	4
	Normal/Gaussian distribution).						
4	Understands the basics of systematic review	-	-	1	1	2	2
	and meta-analysis						
	Critical Appraisal and Evidence-Based						
	Practice						
5	Study Design: Differentiate between various research study designs such as Randomized Controlled Trials, cohort studies, case- control studies, cross-sectional studies and	1	2	3	4	4	5
	understand the strengths and limitations of each.						
6	Measures of Effect: Calculate and interpret common measures of association and effect size relevant to Paediatric practice, such as relative risk (RR), odds ratio (OR), Number Needed to Treat (NNT), sensitivity, and	-	1	2	2	3	4
	specificity.						

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
7	Bias and Confounding: Identify potential sources of bias (e.g., selection, information, confounding) in a study and understand	-	1	2	3	3	4
	methods to minimize them.						
8	Critical Literature Evaluation: Critically analyze the methodology, statistical analysis, and conclusions of published medical	-	1	2	3	4	5
	literature to determine the validity and						
	applicability of the findings to clinical practice						
	Research methodology and application						
9	Research Protocol: Demonstrate competence in formulating a research question (PICO format) and developing a basic research protocol, including the appropriate statistical	1	2	3	4	5	5
	tests to be used.						
10	Able to understand the level of evidence	1	2	3	3	4	4
	available for a given research question and apply the GRADE approach						
11	Data Presentation: Choose and construct appropriate graphical (e.g., bar charts,	1	2	3	4	5	5
	histograms, scatter plots) and tabular summaries of data.						
	Data Interpretation: Interpret the results of common statistical tests (t-test, Chi-square test, ANOVA,	-	1	2	3	4	5

Sl. No.	Major Domain	Minimum expected performance at months					
		6	**12**	**18**	**24**	**30**	**36**
	correlation/regression						
	analysis) used in Paediatric research.						
12	Statistical Software: Have a basic working	-	-	1	2	3	4
	knowledge of data entry and running simple descriptive statistics using relevant software						
13	Morbidity and Mortality Data: Demonstrate skills in documenting, analyzing, and interpreting morbidity and mortality data	1	2	3	4	5	5
	relevant to patient care and hospital audit.						
XXX	Principles of medical education						
1	Understands the principles of adult learning,	-	1	2	3	3	4
	domains of learning, and principles of formative and summative assessment						
2	Prepares and conducts appropriate teaching-	-	1	2	3	3	4
	learning sessions						

Learning Objectives for Key Competencies

At the end of three years the Trainee should be able to:

(i) Independently manage and/or provide healthcare services to sick neonates, children, or adolescents, within the framework of the healthcare system in which he/she is placed

(ii) Provide effective new-born care (including pre-delivery, intrapartum, and postpartum) services within the framework of the healthcare system in which he/she is placed

(iii) Distinguish normal neonates, children, and adolescents from abnormal counterparts, in order to prioritize health care delivery/services to those in maximum need

(iv) Appreciate and recognize the key importance of maternal and child health in the context of the health priority of the country;

(v) Practice Paediatric health care delivery services in keeping with the principles of professional ethics;

(vi) Identify social, economic, environmental, biological, and emotional determinants of child and adolescent health, and institute diagnostic, therapeutic, rehabilitative, preventive, and promotive measures to provide holistic care to children;

(vii) Appreciate the importance of child growth and development as the very foundation of Paediatrics and help each child realize her/his optimal growth and development potential;

(viii) Demonstrate the adequate level of proficiency and competency in basic clinical skills pertaining to child health, e.g., taking a clinical history, conducting thorough clinical physical examination including Assessment of physical growth and neurodevelopmental and behavioral development, and in arriving at the most likely or possible clinical diagnosis, in identifying precipitating or predisposing factors; high risk and low-risk groups and good and bad prognostic factors;

(ix) Plan and perform relevant, cost-effective investigative and therapeutic procedures in confirming the possible diagnosis and excluding the other differential diagnosis;

(x) Develop analytical skills in the interpretation of important diagnostic, imaging, and laboratory results;

(xi) Diagnose illness in children based on the analysis of history, physical examination, and investigative workup; Plan and deliver comprehensive treatment for illness in children using principles of rational drug therapy and Evidence-Based Medical principles;

(xii) Plan and advice measures for the prevention of childhood diseases and disabilities.

(xiii) Plan rehabilitation of children suffering from chronic illness and handicap, and those with special needs;

(xiv) Manage childhood emergencies efficiently

(xv) Provide comprehensive care to normal, 'at risk 'and sick neonates;

(xvi) Demonstrate skills in accurate, meaningful, and concise documentation of clinical case detail and in the collection of periodical and cumulative morbidity and mortality data relevant to the assigned situation;

(xvii) Develop sensitivity and appreciate the emotional and behavioural characteristics and needs of children, and keep these fundamental attributes in focus while dealing with them;

(xviii) Demonstrate empathy and humane approach towards patients and their families and respect their sensibilities;

(xix) Demonstrate effective communication and counselling skills in explaining management options prognosis and in providing health information and health education messages to patients, families, and communities;

(xx) Develop self-learning skills as a self-directed learner and recognize the need for updating knowledge and clinical, practical, and technical skills pertaining to his/her professional area of practice; in selecting appropriate and accurate learning resources, and critically analyze relevant published literature in order to practice evidence-based Paediatrics;

(xxi) Demonstrate competencies in the application of basic concepts of research methodology and epidemiology in collection, interpretation, and publication of scientific medical data;

(xxii) Facilitate learning of medical/nursing students, practicing physicians, paramedical health workers, and other providers as a teacher-trainer;

(xxiii) Play an effective and responsible role in the training and implementation of National Health Programmes pertaining to child health;

(xxiv) Organize and supervise the desired managerial and leadership skills;Function as an effective and productive member of a team engaged in health care, research and education;

(xxv) Recognize the diagnostic and management limitations of the health facility and the need for appropriate and timely referral of children to higher health facilities and specialty care;

(xxvi) Recognize the need for medico-legal registration and referrals of specific cases and maintenance of appropriate documentation of case details.

(xxvii) Put to practice the principles of medical ethics and maintain the integrity and dignity of the chosen profession.

(xxviii) Carry out resuscitation, triaging, and offer appropriate medical help to affected children during disasters

(xxix) Complete the execution of a research study as part of his/her thesis, including all components viz. framing research questions, writing the protocol, review of literature, execution of the research study (in keeping with the principles of research methodology and research ethics), and write the thesis report.

(xxx) Make effective scientific/academic presentations to peers

(xxxi) (xxxiii)Complete the execution of a research study as part of his/her thesis, including all components viz. framing research questions, writing the protocol, review of literature, execution of the research study (in keeping with the principles of research methodology and research ethics), and write the thesis report.

(xxxii) Make effective scientific/academic presentations to peers.

(xxxiii) Prepare a scientific paper (or contribute to the preparation thereof) of research carried out by himself/herself or others with whom he/she is associated.

(xxxiv) Utilize resources (including time, manpower, and materials) effectively so as to provide optimal child health services within the constraints of resources available in the healthcare setting where he/she is placed.

(xxxv) Learn basic administrative skills such as documentation, maintenance of records, submission of relevant reports, etc.

(xxxvi) Develop knowledge and skills to provide vaccinations to children.

Annexure I (Part B)

Core Ideas in Practice of Key competencies

General Guidelines – during the training period, effort must always be made to ensure that adequate time is spent discussing child health problems of public health importance in the country or a particular region.

A. Core Paediatric Topics

i. Growth and development:

- principles of growth and development
- normal growth and development
- sexual maturation and its disturbances childhood and adolescence
- failure to thrive and short stature
- other abnormal growth patterns, including overweight and obesity

ii. Neonatology:

- perinatal care
- care in the labor room
- neonatal resuscitation
- prematurity
- perinatal care
- low birth weight
- care in the labor room and resuscitation, newborn feeding
- prematurity
- respiratory distress
- common transient phenomena newborn
- jaundice
- infections
- malformations
- understanding of perinatal medicine
- renal disorders
- thermoregulation and its disorders
- birth asphyxia
- metabolic disorders
- normal newborn
- apnea
- anemia and bleeding disorders
- gastrointestinal disorders
- neurologic disorders

iii. **Nutrition:**

- maternal nutritional disorders;
- nutrition for the low-birth- weight impact on fetal outcome
- infant feeding, including breastfeeding
- vitamin, mineral, and micronutrient deficiencies
- complementary feeding
- protein-energy malnutrition
- overweight and obesity
- adolescent nutrition
- parenteral and enteral nutrition in sick children
- nutritional management of systemic illness (celiac disease, hepatobiliary disorders, nephrotic syndrome)
- food fortification
- National level, regional, and international nutritional rehabilitation guidelines and programs

iv. **Cardiovascular:**

- congenital heart diseases (cyanotic and acyanotic
- rheumatic fever and rheumatic heart disease
- infective endocarditis
- the disease of the myocardium (cardiomyopathy, myocarditis)
- heart failure
- systemic and pulmonary hypertension
- arrhythmia
- hyperlipidemia in children
- diseases of the pericardium
- Interpretation of ECG and Echocardiography.

v. **Nephrology & Urology disorders:**

- acute and chronic glomerulonephritis
- nephrotic syndrome
- hemolytic uremic syndrome
- urinary tract infection
- vesico-ureteric reflux
- renal involvement in systemic dieseases
- renal tubular disorders
- congenital and hereditary renal disorders
- renal and bladder stones
- posterior urethral valves
- undescended testis
- hydronephrosis, voiding dysfunction
- Wilm's tumor
- hematuria
- acute kidney injury
- chronic kidney disease

vi. **Respiratory:**

- congenital and acquired disorders of the nose, tonsils, and adenoids
- allergic rhinitis and sinusitis
- infections of the upper respiratory tract
- obstructive sleep apnea
- congenital anomalies of the lower respiratory tract
- acute inflammatory upper airway obstruction
- foreign body in larynx, trachea & bronchus
- trauma to larynx
- subglottic stenosis (acute and chronic)
- neoplasms of the respiratory system
- bronchitis
- bronchiolitis
- aspiration pneumonia
- Gastroesophageal reflux
- acute pneumonia
- recurrent and interstitial pneumonia
- suppurative lung disease
- atelectasis
- cystic lung diseases
- emphysema and hyperinflation
- wheezing and bronchial asthma
- pulmonary edema
- bronchiectasis
- pleural effusion
- pulmonary leaks
- mediastinal mass
- pneumothorax
- Chronic lung disease
- cystic fibrosis
- Pulmonary function test

vii. **Gastrointestinal and liver disease:**

- the disease of the 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
- Functional G.I. disorders
- hepatic failure
- chronic liver disease
- Wilson's disease
- Budd-Chiari syndrome
- metabolic diseases of the liver
- cirrhosis and portal hypertension
- hepatitis
- acute and chronic pancreatitis
- Neonatal cholestasis

viii. **Neurologic and neuromuscular disorders:**

- seizure and non-seizure paroxysmal events
- meningitis
- epilepsy and epileptic syndrome of childhood
- brain abscess
- Paediatric stroke
- coma
- acute encephalitis and febrile encephalopathies
- Guillain-Barre syndrome
- neurocysticercosis and other neuroinfections
- HIV encephalopathy
- subacute sclerosing panencephalopathy
- cerebral palsy
- neurometabolic disorders
- neurodegenerative disorders
- neuromuscular disorders
- mental retardation
- demyelinating disorders
- floppy infant
- learning disabilities
- muscular dystrophies
- acute flaccid paralysis and AFP surveillance
- ataxia
- movement disorders of childhood
- CNS tumours
- CNS malformations
- Hydrocephalus

ix. **Hematology & Oncology:**

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

x. **Endocrinology:**

- hypopituitarism/hyperpituitarism
- diabetes insipidus
- pubertal disorders
- hypo- and hyperthyroidism
- adrenal insufficiency
- Cushing's syndrome
- adrenogenital syndromes
- Congenital adrenal hyperplasia
- diabetes mellitus
- hypoglycemia
- short stature
- gonadal dysfunction and intersexuality
- obesity
- disorders of calcium metabolism

xi. **Infections:**

- bacterial
- viral
- fungal
- parasitic
- rickettsial
- mycoplasma
- protozoal infection
- tuberculosis
- helminthic infection
- nosocomial infections
- fever without focus

- febrile neutropenia
- monitoring for nosocomial infections
- HIV
- control of epidemics and infection prevention
- safe disposal of infectious material

xii. **Emergency & Critical care:**

- emergency care of shock
- cardio-respiratory arrest
- respiratory failure
- acute renal failure
- status epilepticus
- acute severe asthma
- fluid and electrolyte disturbances and their therapy
- acid-base disturbances
- cardiopulmonary resuscitation
- accidents
- scorpion and snake bites
- brain death
- raised intracranial pressure
- poisonings
- triaging

xiii. **Immunology & Rheumatology:**

- arthritis (acute and chronic)
- connective tissue disorders
- vasculitis syndromes
- immunodeficiency diseases

xiv. **Diseases of ear, nose and throat :**

- acute and chronic otitis media
- conductive/sensorineural hearing loss
- post-diphtheritic palatal palsy
- acute/chronic tonsillitis/adenoiditis
- allergic rhinitis/sinusitis
- foreign body

xv. **Skin Diseases:**

- exanthematous illnesses
- vascular lesions
- pigment disorders
- vesiculobullous disorders
- infections: pyogenic
- fungal and parasitic infection
- Steven-Johnson syndrome
- eczema
- seborrheic dermatitis
- drug rash
- urticaria
- alopecia
- ichthyosis
- emergen
- cies in Paediatric
- dermatology

xvi. **Eye problems:**

- refraction and accommodation
- partial/total loss of vision
- cataract
- night blindness
- chorioretinitis
- conjunctival and corneal disorders
- strabismus
- retinopathy of prematurity

- retinoblastoma
- optic atrophy
- papilledema
- eye allergies

xvii. **Behavioural & Developmental disorders:**

- rumination
- pica
- enuresis
- encopresis
- sleep disorders
- habit disorders
- breath-holding spells
- anxiety disorders
- mood disorders
- temper tantrums
- attention deficit hyperactivity disorders
- autism spectrum disorder
- Assessment of neurodevelopment using validated age-appropriate tools

xviii. **Social paediatrics:**

- national health programs related to child health
- child abuse and neglect
- child labor
- adoption
- disability and rehabilitation
- the national policy of child health and population
- juvenile delinquency
- child-friendly initiatives
- legal issues related to children
- rights of the child

xix. **Genetics:**

- principles of inheritance
- pedigree drawing
- chromosomal disorders
- single-gene disorders
- multifactorial/polygenic disorders
- genetic diagnosis
- prenatal diagnosis
- inborn errors of metabolism
- genetic counselling

xx. **Orthopaedics:**

- major congenital orthopaedic deformities
- bone and joint infections: pyogenic & tubercular
- common bone tumours
- skeletal dysplasia
- common Paediatric fractures and dislocations

xxi. **Basic Dentistry:**

- caries
- normal and
- Delayed dentition
- supernumerary teeth

- gingivitis
- oral ulcers

B. Basic Science:

- embryogenesis of different organ systems, especially heart, genitourinary system, and gastrointestinal tract
- applied anatomy of different organs
- functions of the kidney, liver, lungs, heart, and endocrine glands
- physiology of micturition and defecation
- placental physiology, fetal and neonatal circulation
- regulation of temperature (especially in newborns)
- blood pressure
- acid-base balance
- fluid electrolyte balance
- calcium metabolism
- growth and development at different ages
- puberty and its regulation
- nutrition
- normal requirements of various nutrients
- teaching methodology
- principles of basic immunology
- bio-statistics, clinical epidemiology
- pharmacokinetics of commonly used drugs
- basics of genetics and molecular biology
- vitamins and their functions
- hematopoiesis, hemostasis
- bilirubin metabolism

C. Community and Social Paediatrics:

- national health and nutrition programs
- health legislation
- prevention of blindness
- school health programs
- prevention of sexually transmitted diseases
- contraception
- nutrition screening of the community national policy on children
- adoption
- child labour
- juvenile delinquency
- Immunization schedule, both National immunization schedule; also, optional vaccines, vaccination in specialized groups (immunosuppressed,
- investigation of adverse events following immunization
- general principles of prevention and control of infections, including foodborne, waterborne, soil-borne, and vector-borne diseases, and investigation of an outbreak in a community public health programs for infectious disease

D. Research methodology and Biostatistics:

- different types of study design
- test of significance
- survival analysis
- regression analysis
- systematic review and level of evidence
- sample size estimation
- diagnostic test evaluation

E. Approach to clinical problems

i) Growth and development

- precocious and delayed puberty
- impaired learning
- developmental delay

ii) **Neonatology**

- low birth weight newborn
- sick newborn

iii) Nutrition

- breastfeeding and complementary feeding
- failure to thrive and micronutrient deficiencies
- protein-energy malnutrition (underweight, wasting, stunting)

iv) Cardiovascular

- murmur
- cyanosis
- congestive heart failure

v) Git and liver

- acute diarrhea
- vomiting
- abdominal pain and distension
- ascites
- persistent and chronic diarrhea

vi) Respiratory

- cough/chronic cough
- hemoptysis

vii) Infections

- acute onset pyrexia
- recurrent infections
- systemic hypertension
- arrhythmia
- shock
- constipation
- gastrointestinal bleeding
- jaundice
- hepatic failure and encephalopathy
- hepatosplenomegaly
- nosocomial infections
- fever with exanthems
- Wheezy child
- Respiratory distress

viii) Renal

- hematuria/dysuria
- bladder/bowel incontinence
- voiding dysfunctions
- Prolonged pyrexia with and without localizing signs
- Fever with hepatosplenomegaly
- renal failure (acute and chronic)
- hypertension
- polyuria

ix) Hematology and oncology

- anemia
- bleeding

- blood malignancies

x) Neurologylimping

- child convulsions
- paraplegia and quadriplegia
- macrocephaly and microcephaly

xi) Endocrine

- thyroid swelling
- ambiguous genitalia

xii) Miscellaneous

- skin rash
- lymphadenopathy
- epistaxis
- floppy infant
- acute flaccid paralysis
- headache
- neuroregression
- cerebral palsy
- obesity
- short stature
- proptosis, arthralgia, arthritis

Annexure I (Part C)

The objectives of the peripheral posting are mentioned below:

Department	Objective
Preventive and Social Medicine (Posting in Urban or Rural Health Centre)	● To learn about primary or secondary health care services in rural India ● To know about the implementation and effect of various national programs concerned to child care. ● To get training on immunization and the universal immunization program.
Medical Oncology	● To learn about common Paediatric haematological malignancies: clinical presentation, treatment, complications and prognosis ● To learn about chemotherapy administration and monitoring ● To learn the basics about Paediatric solid tumours and histiocytic disorders. ● To learn the basics about hematopoietic stem cell transplantation.
Dermatology	● To learn about the diagnosis and treatment of common Paediatric dermatological disorders. ● To learn and practice skin biopsy ● To learn about simple diagnostic procedures (like microscopy/KOH test, etc) performed in OPD
Radiodiagnosis	● To learn the basics about Paediatric X-ray, CT, USG and MRI ● To learn about the interpretation of CT, MRI and Angiography in children

Paediatric surgery	● To learn about the clinical presentation and intervention of common Paediatric surgical disorders. ● To learn and practice incision drainage and suturing. ● To learn about management of Paediatric burns and post-operative care. ● To observe common surgeries performed in children during the posting
Clinical Immunology	● To learn about the diagnosis and treatment of common Paediatric autoimmune disorders. ● To learn about follow-up care of Paediatric JIA and SLE ● To learn the basics about primary immunodeficiency in children
Physical Medicine and Rehabilitation	● To learn about various physiotherapy methods related to Paediatric medicine ● To know about various physiotherapy techniques related to children with cerebral palsy ● To learn about chest physiotherapy for children with chronic lung disorders ● To get training about various physiotherapy techniques for children with other neurological disorders and contractures.

Concerned department in-charge faculty need to sign the log book assessment and send his/her attendance (no of days present/absent) to the paediatric department at the end of the posting.

Annexure II

Procedures to be learnt during the Intra-department rotational posting in different workplaces

Procedure
1. Urine routine assessment
a) To know the correct method of urine collection
b) To know how to centrifuge urine and prepare it for microscopic examination
c) To be able to perform bedside urine dipstick assessment
d) To be able to identify white blood cells, red blood cells and casts in urine
2. Peripheral smear examination
a) To know how to prepare a smear
b) To know how to correctly view the prepared smear under a microscope
c) To be able to identify normal and abnormal smear findings
3. CSF cytology
a. To be able to prepare CSF for cytological examination
b. To be able to identify white cells and abnormal cells and interpret the CSF biochemistry
4. Blood gas analysis
a. To be able to perform venous and arterial blood gas analysis
b. To be able to interpret findings of a blood gas and institute appropriate corrective measures
5. IV cannula insertion
a) To be able to identify the proper segments of the vein for cannula insertion
b) To be able to secure the cannula safely
c) To be able to cannulate a neonate and young infant
d) To be able to place an IV cannula in a child in shock
e) To be able to identify thrombophlebitis and remove the cannula at the appropriate time
6. Foley's catheter insertion
a. To be able to place a Foley‟s catheter
b. To be able to identify immediate complications post-Foley‟s catheter insertion
7.NG tube insertion
a. To be able to know the procedure and place an NG tube correctly
b. To be able to identify immediate complications post-NG tube insertion
8. Lumbar puncture
a. To be able to recognize when to do and not do a lumbar puncture
b. To be able to perform LP
c. To be able to identify immediate complications post LP
9. Ascitic tap
a) To identify candidates for ascitic tap examination

b) To be able to perform an ascitic tap
c) To be able to identify immediate complications post-ascitic tap
10. Pleural tap
a) To identify candidates for pleural tap examination
b) To be able to perform a pleural tap
c) To be able to identify immediate complications post pleural tap
11. Intra-osseous line insertion
a) To be able to place an intraosseous line and secure it safely
12. Bone marrow examination
a. To be able to recognize when to do and not do bone marrow examination
b. To be able to perform bone marrow
c. To be able to identify immediate complications post bone marrow
13. Umbilical catheter insertion
a. To be able to place an umbilical catheter
b. To be able to recognize immediate complications post-umbilical catheter insertion
14. Endotracheal intubation
a. To be able to identify candidates for invasive ventilation
b. To be able to perform emergency rapid sequence intubation
c. To be able to check the position of the ET tube and institute corrective measures if required
15. Central line insertion
a) To be able to identify an appropriate vessel for inserting a central line
b) To be able to place a central line
c) To be able to identify immediate complications post-central line insertion
16. Arterial line insertion
a) To be able to identify an appropriate vessel for inserting an arterial line
b) To be able to place an arterial line
c) To be able to identify immediate complications post-arterial line insertion
17. PICC line (peripherally inserted central catheter) insertion
a. To be able to understand how to choose a vessel for PICC line insertion
b. To be able to place a PICC line
c. To be able to recognize immediate complications post PICC line insertion
18. Hemodialysis catheter insertion
a) To be able to identify an appropriate vessel for inserting a hemodialysis catheter
b) To be able to place an HD catheter
c) To be able to identify immediate complications post-HD catheter insertion

19. Peritoneal dialysis catheter insertion
a) To be able to place a stiff PD catheter
b) To be able to place a soft PD catheter
c) To be able to identify immediate complications post PD catheter insertion
20. VP Shunt/EVD tap
a. To identify candidates for shunt tap examination
b. To be able to perform shunt tap
c. To be able to identify immediate complications post-shunt tap
21. Chest tube insertion
a. To be able to recognize when to place an intercostal drainage tube
b. To be able to place a chest tube bedside in emergencies
c. To be able to recognize immediate complications post chest tube insertion
22. Kidney biopsy
a. To identify candidates for a kidney biopsy
b. To be able to perform a kidney biopsy
c. To be able to recognize immediate complications post-kidney biopsy
23. Liver biopsy
a. To identify candidates for a liver biopsy
b. To be able to perform a liver biopsy
c. To be able to recognize immediate complications post liver biopsy

Annexure III

SAMPLE FORMS FOR OBSERVATION AND ASSESSMENT

MONTHLY WORK RECORD AND ASSESSMENT DIVISION:

DURATION:

FROM

TO CONSULTANTS:

I. GENERAL WORK DESCRIPTION:

(OPD and IP cases management and Emergency duties)

II. CLINICAL SKILLS LEARNED

Bedside learning, procedures, equipment handling etc)

III. ACADEMIC PERFORMANCES:

(Case presentation, seminar, Journal club, medical care review meet, Telemedicine, and health camps, UG teaching etc)

IV. THESIS WORK:(Thesis case recruitment and other research-related activities

V. INTERESTING CASES:(One interesting case)

POSTING ASSESSMENT

(Marks from 1 to 10 for each component)

I.	Theoretical Knowledge	:
II.	Clinical Skills	:
III.	Communication Skills	:
IV.	Punctuality	:
V.	Attitude Toward Patients/Parents	:
VI.	Interpersonal Relationship: With Peers/Staffs/Faculties	
VII.	Sincerity	:
VIII.	Documentation	:
IX.	Maintaining clean workplace	:
X.	Organization and Planning	:

Total : /100

Signature of Unit Consultant

CASE PRESENTATION ASSESSMENT CHART

TOPIC:

History Taking and Symptom Analysis: /30

Examination and Interpretation of Findings: /30

Discussion : /40

(Approach, differential diagnosis, investigations, treatment)

TOTAL: /100

Date: Assessing Faculty/Moderator Signature

ACADEMIC PRESENTATION ASSESSMENT CHART

TOPIC:

Skill	**Specific Component**	**Marks (1-5)**
Set Induction	1)Aroused Interest in the beginning by relation to previous learning , throwing a new idea, questioning etc	
	2)Specified the objectives of the presentation	
Planning	3) Organised material in a logical sequence	
	4)Used relevant content matter	
Presentation	5)Changed the pace of presentation by shifting emphasis, joke, etc	
	6)Used a specific example to illustrate main ideas	
	7)Used non-verbal cues, eye contact etc	
Audience Participation	8)Allowed questions from the audience	
	9)Asked questions	
	10)Solicited/Raised questions	
	11)Rewarded audience effort	
Use of AV aids	12)Used proper AV aids	
	13)Used the aid(s) effectively	
	14) Summarized the most important points at the end of the session	
	15)Completed on time	
Overall effectiveness of the session	Marks for 25	
Total	Out of 100	

Date: Assessing Faculty/Moderator Signature

Details and Progress of Dissertation

Title:

Guide:

Co-guides:

Dissertation progress:

Timeline	**No of cases recruited**	**Percentage Completion**	**Remarks**	**Guide Signature**
First semester				
Second semester				
Third semester				
Fourth semester				
Fifth semester				
Sixth semester				

Abstract of Dissertation:

Details of Leave and Disciplinary Action

S. No	Type of Leave	From	To	Duration (Days)
Total Number of Days				

Any disciplinary action initiated against the candidate during the training period:

Yes / No If yes, provide the details:

Head of the Department

SUMMARY OF THE PAEDIATRIC TRAINING

- ✧ Duration of training:
- ✧ Procedural skills learned:
- ✧ No. of seminars presented:
- ✧ No. of journal clubs presented:
- ✧ No. of clinical cases presented:
- ✧ Conference paper presentations:
- ✧ Publications:
- ✧ Special training underwent:
- ✧ Orientation programs attended: Conferences attended:
- ✧ Quiz programs participated: Presentation in JSS/ other conferences:
- ✧ Awards/Achievement:
- ✧ Others:

HEAD OF DEPARTMENT