



PRAVARA INSTITUTE OF MEDICAL SCIENCES (DEEMED TO BE UNIVERSITY)

Loni, Tal. Rahata, Dist. Ahmednagar 413736
NAAC Re-accredited with 'A' Grade

SYLLABUS

UG Programme- Paediatrics

(Competency Based Undergraduate Curriculum will be implemented from
MBBS batch 2024 from 2024-25)

SYLLABUS

UG PROGRAMME PAEDIATRICS

Goals:

At end of training on pediatrics, the student should be able to:

- i. Assess and promote optimal growth, development and nutrition of children and adolescents and identify deviations from normal.
- ii. Recognize and provide emergency and routine ambulatory and First Level Referral Unit care for neonates, infants, children and adolescents and refer as may be appropriate.
- iii. Perform procedures as indicated for children of all ages in the primary care setting.
- iv. Recognize children with special needs and refer appropriately.
- v. Promote health and prevent diseases in children.
- vi. Participate in National Programmes related to child health and in conformation with the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy.
- vii. Communicate appropriately and effectively.
- viii. Describe the normal Growth and Development during fetal life, Neonatal period, Childhood and Adolescence and the deviations thereof.
- ix. Describe the common Pediatric disorders and emergencies in terms of Epidemiology, Etiopathogenesis, Clinical manifestations, Diagnosis and also describe the rational therapy and rehabilitation services.
- x. Workout age related requirements of calories, nutrients, fluids, dosages of drugs etc. in health and disease.
- xi. Describe preventive strategies for common infectious disorders, Malnutrition, Genetic and Metabolic disorders, Poisonings, Accidents and Child abuse.
- xii. Outline national programs related to child health including Immunization programs.
- xiii. Take detailed Pediatric and Neonatal history and conduct an appropriate physical examination of children and neonates, make clinical diagnosis, conduct common.

- xiv. Bedside investigative procedures, interpret common laboratory investigations, plan and institute therapy.
- xv. Take anthropometric measurements, resuscitate newborn, prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current National programs, perform venesection, start intravenous fluids and provide nasogastric feeding.
- xvi. Demonstrate knowledge about all steps of the diagnostic procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural and ascetic tap.
- xvii. Distinguish between normal Newborn babies and those requiring special care and institute early care to all newborn babies including care of preterm and low birth weight babies, provide correct guidance and counseling about Breast feeding and Complementary feeding.
- xviii. Provide ambulatory care to all not so sick children, identify indications for specialized/ inpatient care and ensure timely referral to those who require hospitalization.

Integration : The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for neonates, infants, children and adolescents based on a sound knowledge of growth development, disease and their clinical, social, emotional, psychological correlates in the context of national health priorities.

TOTAL TEACHING HOURS : 336

- 40 Hours - Lecture
- 65 Hours - Small Group Teaching
- 15 Hours - Self directed learning
- 216 Hours - Clinical Posting

A) Lecture Total 40 Hours

- 20 Hours in MBBS III Part -I
- 20 Hours in MBBS III Part- II

B) Small Group Teaching/ Tutorial / Integrated teaching Total 65 Hours

- 30 Hours in MBBS III Part –I
- 35 Hours in MBBS III Part –II

C) Self Directed Learning Total 15 Hours

- 5 Hours in MBBS III Part –I
- 10 Hours in MBBS III Part –II

D) Clinical Posting Total 216 Hours

- 72 Hours in Phase II MBBS (4 Weeks)
 - 36 Hours in Phase III MBBS Part-I (2 Weeks)
 - 108 Hours in Phase III MBBS Part –II (6 Weeks)
- Clinical posting 15 hrs per week: Monday to Friday

Clinical posting shall be for 3 hrs per day

- 8 Symposia will be conducted from Theory Topics.
- 2 Full day Workshops –
 - IMNCI
 - NRP
- ATCOM Module – will be covered in III MBBS Part-II

SYLLABUS

III MBBS – Part I

Tutorials / Small Group Discussions III (PartI) MBBS (30hours)

S. No.	Topic	Hour s	Lectures (Competency No.)	SLO	Horizontal Integration
1	Normal Growth and Development	01	Developmental milestones (PE 1.5, 1.6)	1. Definition of Development 2. Principals of development 3. Factors affecting Development 4. Domains of Development 5. Milestones in various domains	Psychiatry
				6. Developmental assessment	
2	Common problems related to growth	02	Failure to thrive (PE 2.1, 2.4)	1. Definition 2. Etiology 1. Clinical Features 2. Evaluation of a child with Failure to thrive 3. Management	
			Short stature (PE 2.6)	1. Definition 2. Etiology 3. Clinical Features 4. Evaluation of a child with Short stature 5. Management	
3.	Care of the Normal Newborn, and High-risk Newborn	02	Care of normal newborn (PE 20.1, 20.2, 20.6,)	1. Define the common neonatal nomenclatures including the classification 2. Describe the characteristics of a Normal Term Neonate and High-Risk Neonates. 3. Explain the care of a normal neonate	Obs & Gynae
			Temperature regulation and Neonatal hypothermia (PE 20.12)	1. Temperature regulation in neonates 2. Disorders of temperature regulation 3. Definition of hypothermia 4. Prevention of hypothermia 5. Clinical features of hypothermia 6. Management of hypothermia	

4.	To promote and support optimal Breast feeding for infants	01	Breast Feeding (PE 7.1, 7.2, 7.3, 7.4, 7.6)	1. Awareness on the cultural beliefs and practices of breastfeeding. 2. Enumerate advantages of breast feeding 3. Explain the physiology of lactation. 4. Technique of breastfeeding 5. Problems in breastfeeding 6. Enumerate the baby friendly hospital initiatives 7. Describe the composition and types of breast milk 8. Discuss the differences between cow's milk and Human milk. 9. Discuss the advantages of breast milk. 10. Over view about expressed breast milk	Obs &Gynae
5.	Complementary Feeding	01	Complementary feeding and	1. Define the term Complementary Feeding. 2. Discuss the principles ,the initiation,	
			IYCF (PE 8.1, 8.2, 8.3)	- attributes, frequency, techniques and hygiene related to Complementary Feeding 3. IYCF 4. Enumerate the common complimentary foods	
6.	Provide nutritional support, assessment and monitoring for common nutritional problems	01	Protein Energy Malnutrition (PE 10.1, 10.2, 10.4, 10.6)	1. Define malnutrition 2. Classify malnutrition including WHO classification, 3. Describe the etio-pathogenesis, clinical features, complication of Severe Acute Malnourishment (SAM) and Moderate Acute Malnutrition (MAM). 4. Differentiate between kwashiorkor and marasmus 5. Outline the clinical approach to a child with SAM an MAM. 6. Management of a child with SAM and MAM. 7. Enumerate the role of locally prepared therapeutic diets and ready to use therapeutic diets. 8. Strategies to prevent malnutrition	

7.	Obesity in Children	01	Obesity (PE 11.1, 11.2, 11.6)	1. Define obesity 2. Describe the common etiology, clinical features and management of obesity in children. 3. Discuss the risk approach for obesity and criteria for referral 4. Discuss the prevention strategies	
8.	Micronutrients in health and disease 1: (Vitamins A,D,E,K,B Complex and C) Micronutrients in health and disease 2: Iron, Iodine,	04	Vitamin A Vitamin E, K(PE 12.1,12.2, 12.4, 12.5, 12.11,12.12, 12.13,12.14) Vitamin B, C and Iodine deficiency disorders (PE 12.15, 12.16,12.18, 12.19,12.20, 13.7, 13.8, 13.10, 13.10)	Vitamin A 1. RDA, dietary sources of Vitamin A and the role in Health and disease. 2. Describe the causes, clinical features, diagnosis and management of Deficiency/ excess of Vitamin A. 3. Discuss the Vitamin A prophylaxis program and the recommendations Vitamin E 1. Discuss the RDA, dietary sources of Vitamin E and their role in health and disease.	
	Calcium and Magnesium			Describe the causes, clinical features, diagnosis and management of deficiency of Vitamin E. Vitamin K 1. Discuss the RDA, dietary sources of Vitamin K and their role in health and disease. 2. Describe the causes, clinical features, diagnosis management and Prevention of deficiency of Vitamin K Vitamin B 1. Discuss the RDA, dietary sources of Vitamin B and their role in health and disease 2. Describe the causes, clinical features, diagnosis and management of deficiency of B complex Vitamins. Vitamin C 1. Discuss the RDA, dietary sources of Vitamin C and their role in Health and disease 2. Describe the causes, clinical features, diagnosis and management of deficiency of Vitamin C(scurvy)	

				Iodine deficiency Disorder 1. Discuss the RDA , dietary sources of Iodine and their role in Health and disease. 2. Describe the causes, clinical features, diagnosis and management of deficiency of Iodine. 3. Discuss the National Goiter Control program and their recommendations.	
			Iron deficiency anemia (PE 13.1, 13.2, 13.5, 13.6)	1. Discuss the RDA, dietary sources of Iron and their role in health and disease' 2. Describe the causes, clinical features, diagnosis and management of Fe deficiency 3. Discuss the National Anemia control program and its recommendations.	
			Vitamin D and Calcium & Magnesium deficiency (PE 12.6, 12.7,	Vitamin D/Ca/Mg 1. Discuss the RDA, dietary sources of Vitamin D and their role in health and disease. 2. Describe the causes, clinical features,	
			12.9, 12.10, 13.11,13.12, 13.13,13.14)	- diagnosis and management of Deficiency/ excess of Vitamin D (Rickets and Hype vitaminosis D). 3. Discuss the role of screening for Vitamin D deficiency 4. Discuss the RDA ,dietary sources of Calcium and their role in health and disease 5. Describe the causes, clinical features, diagnosis and management of Ca Deficiency 6. Discuss the RDA, dietary sources of Magnesium and heirrolein health and disease. 7. Describe the causes, clinical features, diagnosis and management of Magnesium Deficiency	
9	Anemia and other Hemato-oncologic disorders in	02	Anemia (PE 29.1)	1. Definition 2. Etiopathogenesis 3. Classification 4. Approach to a child with anemia	

	children		Nutritional anemia (PE 29.2, 29.3, 29.5)	Iron def anemia/ Megaloblastic anemia 1. Etiopathogenesis 2. Clinical features 3. Lab investigations 4. Management 5. Discuss the National Anemia Control Program	
10.	Fluid and electrolyte balance	01	Fluid and electrolytes (PE 15.1, 15.2)	1. Composition of body fluids 2. Water balance and Osmolality 3. Normal maintenance fluid and electrolyte requirements 4. Sodium balance and its disorders 5. Potassium balance and its disorders 6. Overview of Acid-Base disorders	
11.	National Programs, RCH – Universal Immunizations program	02	Vaccines in children (PE 19.1, 19.2, 19.3, 19.4)	1. Components of the Universal Immunization Program and the National Immunization Program. 2. Epidemiology of Vaccine preventable diseases 3. Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and contraindications. (BCG, OPV, IPV Hep B, DPT, Hib, MMR) 4. Define cold chain and discuss the methods of safe storage and handling of vaccines	
			Immunization in special situations and newer vaccines (PE 19.5, 19.16)	1. Immunization in special situations– HIV positive children, immunodeficiency, pre-term, organ transplants, those who received blood and blood products, splenectomised children, adolescents , travelers. 2. Enumerate available newer vaccines and their indications including pentavalent pneumococcal, rotavirus, JE, typhoid IPV & HPV. 3. Combination vaccines 4. AEFI	

12	Respiratory system	02	RTI GEM – I (PE 28.1, 28.2, 28.3, 28.4, 28.5, 28.6, 28.7, 28.8))	Nasopharyngitis / PharyngoTonsillitis/ Acute Otitis Media (AOM) 1. Etio-pathogenesis 2. Clinical features 3. Management 4. Complications	
				Stridor/ Epiglottitis /Acute laryngo tracheo bronchitis/Foreign Body Aspiration 1. Etiopathogenesis 2. Clinical features 3. Management	
			RTI GEM -II (PE 28.18)	Bronchiolitis and wheeze associated LRTI/ Empyema/Lung Abscess 1. Etio-pathogenesis 2. Clinical features 3. Diagnosis 4. Management 5. Prevention	
13	Vaccine preventable Diseases & Tuberculosis	02	Fever & Exanthema to us Fever (PE 34.14, 34.15)	1. Enumerate the common causes of fever 2. Etiopathogenesis 3. Clinical features 4. Complications 5. Management 6. Approach to a child with Exanthematous Fever	
			Measles, Mumps, Rubella &	1. Etiopathogenesis 2. Clinical features 3. Complications	
			Chicken pox (PE 34.15)	4. Management 5. Prevention 6. Measles, Mumps, Rubella & Chicken pox vaccines	
14	Chromosomal Abnormalities	01	Down syndrome, Turner & Klinefelter syndrome (PE 32.1, 32.3, 32.4, 32.5, 32.6, 32.8, 32.9, 32.10, 32.11, 32.13)	1. Genetic basis 2. Risk factors 3. Clinical features 4. Complications 5. Prenatal diagnosis 6. Management 7. Genetic counseling.	General Medicine – PE 32.3, 32.9 Obs& Gynae – PE 32.9

15	Diarrheal diseases and Dehydration	01	Diarrheal diseases & dehydration incl Persistent diarrhea, Chronic diarrhea and dysentery (PE 24.1, 24.2, 24.3, 24.4, 24.5, 24.6, 24.7, 24.8, 24.14)	1. Etio-pathogenesis 2. Classification 3. Clinical presentation 4. Management 5. Physiological basis of ORT 6. Types of ORS 7. Composition of various types of ORS 8. Classification and clinical presentation of various types of diarrheal dehydration 9. Types of fluid used in Pediatric diarrheal diseases and their composition 10. Role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti-emetics in acute diarrheal diseases	
16	Pediatric Emergencies – Common Pediatric Emergencies	02	Poisoning (PE 27.8, 14.1, 14.2, 14.3, 14.4)	1. Clinical approach to a child with suspected poisoning 2. Common poisonings – Hydrocarbon /OP/ PCM/Lead/ Envenomation 3. Etiopathogenesis 4. Clinical features 5. Lab investigations 6. Management	General Medicine
			Child abuse (PE 27.29)	1. Causes 2. Clinical presentation Medico-legal implications	
17	Allergic Rhinitis, Atopic Dermatitis, Bronchial Asthma, Urticaria Angioedema	01	Allergy in children (PE 31.1, 31.3, 31.12)	Allergic Rhinitis/Atopic Dermatitis /Urticaria Angioedema 1. Etiology 2. Clinical features 3. Management 4. Complications 5. Prevention	
18	Adolescent health and common problems related to Adolescent Health.	01	Adolescence & Puberty (PE 6.10, 6.11)	1. Visit to the Adolescent Clinic. Discuss the objectives and functions of AFHS (Adolescent Friendly Health Services) and the referral criteria.	Psychiatry

19	Common problems related to Development-1 (Developmental delay, Cerebral palsy)	01	Developmental delay (PE 3.5,3.6, 3.7)	1. Visit a Child Developmental Unit and observe its functioning. Discuss the role of the child developmental unit in management of developmental delay. Discuss their feral criteria for children with developmental delay	
20	Common problems related to Development-2 (Scholastic backwardness, Learning disabilities, Autism ADHD)	01	Scholastic backwardness and Learning Disabilities (LD) (PE 4.5, 4.6, 5.10,5.11)	1. Visit to child guidance linic. Discuss the role of Child Guidance clinic in children with Developmental problems& Behavioral problems.	
TOTAL		30			

III MBBS – Part I

Theory III (Part I) MBBS (20 hours)

S. No	Topic	Hours	Lectures (Competency No)	SLO	Horizontal Integration
1.	Normal Growth and Development	01	Growth & Development (PE1.1,1.2,1.3, 1.5)	1. Definition of Growth 2. Definition of Development 3. Physiology of Growth & Development 4. Normal Growth– Somatic and physical 5. Assessment of Growth 6.	Psychiatry
				parameters; Growth charts 6. Factors affecting Growth & Development 7. Overview of disorders related to Growth & Development	
2.	Common problems related to Development-1 (Developmental delay, Cerebral palsy)	02	Developmental delay (PE 3.1,3.2, 30.10)	1. Definition 2. Developmental delay vs Intellectual disability 3. Etiology 4. Clinical Features 5. Approach to developmental delay and ID 6. Prevention and management	
			Cerebral palsy (PE 3.8, 30.11)	1. Definition 2. Etiopathogenesis 3. Types of CP 4. Evaluation of a child with CP 5. Prevention and management	Physical Medicine & Rehabilitation
3.	Common problems related to Development-2 (Scholastic backwardness, Learning disabilities, Autism ADHD)	02	Scholastic backwardness and Learning Disabilities (LD) (PE 4.1,4.2)	1. Causes of Scholastic backwardness 2. Approach to a child with Scholastic backwardness 3. Definition of LD 4. Types of LD and clinical features 5. Etiology 6. Approach to a child with LD and Management	

			ADHD and Autism (PE 4.3,4.4)	1. Etiology of ADHD 2. Clinical features of ADHD 3. Diagnosis and management of ADHD 4. Etiology of Autism 5. Clinical features of Autism 6. Diagnosis and management of Autism	
4.	Common problems related to behavior	01	Behavioral problems of children include Enuresis & Encopresis (PE5.1,5.2,5.3, 5.4,5.5,5.6,5.7, 5.8, 5.9)	1. Describe the clinical features, diagnosis and management of common behavioral problems like • Thumb sucking, • Feeding problems, • Nail biting • Breath Holding spells, • Pica • Fussy infant. 2. Definition of enuresis and encopresis 3. Differentiate between primary and secondary enuresis 4. Maturation of bowel and bladder control 5. Etiology of Enuresis and Encopresis 6. Clinical features of Enuresis and Encopresis 7. Management of Enuresis and Encopresis	Psychiatry

5.	Adolescent health and common problems related to Adolescent Health.	01	Adolescence & Puberty (PE6.1,6.2,6.3, 6.4,6.5,6.6,6.7, 6.12, 6.13)	1. Define Adolescence 2. Stages of adolescence and SMR 3. Describe the physical, physiological and psychological changes during adolescence and Puberty. 4. Outline the general health problems during adolescence. 5. Describe adolescent sexuality and common problems related to it. 6. Explain the Adolescent Nutrition and common nutritional problems. 7. Outline the common Adolescent eating disorders (Anorexia Nervosa, Bulimia). 8. Describe the common mental health problems during adolescence. 9. Enumerate the importance of obesity and other NCD in adolescents. 10. Enumerate the prevalence and the importance of recognition of sexual drug abuse in adolescents and children.	Psychiatry
6.	Normal nutrition, assessment and monitoring.	01	Normal Nutrition (PE9.1,9.2,9.3, 9.7)	1. Describe the age-related nutritional needs of infants, children and adolescents including micronutrients and vitamins 2. Concept of RDA and balanced diet. 3. Describe the tools and methods for assessment and classification of nutritional status of infants, children and adolescents. 4. Explains the Calorific value of common Indian foods	

7.	Vaccine preventable Diseases & Tuberculosis	8	Tuberculosis in children (PE 34.1, 34.2, 34.12, 34.13)	1. Epidemiology 2. Clinical features and clinical types 3. Complications of Tuberculosis 4. Diagnostic tools for childhood tuberculosis. 5. Indications and discuss the limitations of methods of culturing M. Tuberculosis. 6. Newer diagnostic tools for Tuberculosis including BACTEC CBNAAT and their indications	Respiratory Medicine
			Management of tuberculosis (PE 34.3, 34.4)	1. Various regimens for management of Tuberculosis as per National Guidelines. 2. Preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Programme	Respiratory Medicine
			Diphtheria, Pertussis, Tetanus (PE 34.16)	1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention 6. Diphtheria, Pertussis, Tetanus vaccines	
			Enteric fever (PE 34.17)	1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention 6. Typhoid vaccines	
			Rickettsial diseases (PE 34.20)	1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention	
			Parasitic infections	Common Parasitic infections - leishmaniasis, filariasis, helminthes	
			(PE 34.19)	infestations, amebiasis, giardiasis 1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention	

			Malaria (PE 34.19)	1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention 6. National Malaria Eradication Programme	
			Dengue Fever (PE 34.18)	1. Etiopathogenesis 2. Clinical features 3. Complications 4. Management 5. Prevention 6. Overview of Chikungunya	
8.	Systemic Pediatrics- Central Nervous system	01	Acute Flaccid Paralysis (AFP) and Poliomyelitis (PE 30.13)	1. Etiology 2. Approach to a child with 3. AFP Evaluation 4. Management 5. AFP Surveillance	
9.	Endocrinology	03	Hypothyroidism (PE 33.1)	1. Physiology of thyroidal and Thyroid function test 2. Etiology 3. Congenital vs Acquired 4. Clinical features 5. Evaluation 6. Management 7. New-born Screening	
			Diabetes mellitus in children and DKA (PE 33.4)	1. Etiopathogenesis 2. Diagnostic criteria 3. Classification 4. Clinical features 5. Management 6. Complications in cl DKA	
			Disorders of puberty (PE 33.8)	Precocious and delayed Puberty 1. Definition 2. Etiology 3. Clinical Features 4. Evaluation 5. Management	
TOTAL		20			

Self-Directed Learning III (Part I) MBBS (05 hours)

S. No	Topic	Hours	Lectures (Competency No.)	SLO	Horizontal Integration
1.	The National Health Programs, NHM The National Health Programs, RCH	05	National programs pertaining to maternal & child health, child survival & safe motherhood (PE 17.1, 17.2, 18.1, 18.2)	1. State the vision and outline the goals, strategies and plan of action of NHM and other important national programs pertaining to maternal and child health including RMNCH A+, RBSK, RKSK, JSSK mission India Dhanush and ICDS. 2. List and explain the components, plan, outcome of Reproductive Child Health(RCH)program and appraise its monitoring and evaluation 3. Explain preventive interventions for child survival and safe motherhood	Obs & Gynae
TOTAL		05			

III MBBS – Part II

Tutorials/Small Group Discussions III (Part II) MBBS (35hours)

S. No	Topic	Hours	Domain (Competency No.)	SLO	Horizontal Integration
1	Group Discussions	01	Fluids & Electrolytes, Nutrition (PE 15.3, 15.4, 15.5, 9.5)	1. Calculate fluid and electrolyte imbalance, Interpret electrolyte report, 2. Calculate the fluid and electrolyte requirement in health 3. Plan an appropriate diet in health & disease	
		01	Cardiac Failure (PE 23.11, 23.16, 23.17, 23.18)	1. Develop treatment plan and prescribe appropriate drugs including fluids in cardiac diseases, anti-failure drugs, and inotropic agents. 2. Discuss the indications and limitations of Cardiac catheterization. 3. Enumerate some common cardiac surgeries like BT shunt, Potts and Waterston's and corrective surgeries 4. Demonstrate empathy while dealing with cardiac disease.	
		01	Oxygen Therapy (PE 27.9, 27.10, 14.5)	1. Discuss oxygen therapy in Pediatric emergencies and modes of administration. 2. Observe the various methods of administering Oxygen. 3. Discuss oxygen toxicity and free radical injury	
		01	Counseling (PE 2.3, 3.4, 8.5, 27.32, 27.33, 28.20)	1. Counseling apparent with failing to thrive child 2. Counselling a parent with developmental delay 3. Counsel & educate mother on the best practices in	

				complimentary feeding 4. Obtain Informed Consent.	
				5. Counsel parents of dangerously ill/terminally ill child to break bad news 6. Counsel the child with asthma on the correct use of inhalers in as emulated environment	
		01	Hemat (PE 29.18,29.20)	1. Enumerate the referral criteria for Hematological conditions. 2. Enumerate the indications for splenectomy and precautions	
2.	Radiology	02	X- Ray / USG / Neuroimaging (PE 21.12,21.13, 23.12, 26.9,28.17, 30.21, 30.22,31.9, 34.8)	1. Interpret report of Plain XRay of KUB 2. Enumerate the indications for and Interpret the written report of Ultra sonogram of KUB 3. Interpret a chest Xray and recognize Cardiomegaly 4. Interpret Liver USG 5. Interpret X-ray of the paranasal sinuses and mastoid; and /or use written report in case of management 6. Interpret CXR in foreign body aspiration and lower respiratory tract infection, understand the significance of thymic shadow in pediatric chest X-rays 7. Enumerate the indication and limitations & Interpret the reports of CT, MRI Brain & Spine 8. Interpret CX Ray in Asthma 9. Interpret a Chest Radio graph n pediatric TB	
3.	Cards (Case Scenario	03	(PE21.11,23.13,23.14. 24.13, 26.9,26.11,	1. Interpret Hemogram and Iron Panel 2. interpret the common analyses in a Urine	

	based)		28.16, 29.14, 19.15, 29.16, 30.20, 30.21, 30.22, 33.3, 33.6, 33.9, 34.9, 34.10)	examination 3. Interpret Pediatric ECG 4. Choose and Interpret blood reports in Cardiac illness 5. Interpret RFT and electrolyte report 6. Interpret Liver Function Tests,	
				viral markers. 7. Enumerate indications of UGI Endoscopy 8. Interpret blood tests relevant to upper respiratory problems. 9. Interpret CBC, LFT in anemia 10. Perform and interpret peripheral smear 11. Discuss the indications for Hemoglobin electrophoresis and interpret report 12. Interpret and explain the finding in a CSF analysis 13. Interpret and explain neonatal thyroid screening report 14. Perform and interpret Urine Dip Stick for Sugar. Interpret Blood sugar reports and explain the diagnostic criteria for Type 1 Diabetes 15. Interpret the reports of EEG 16. Perform Sexual Maturity Rating (SMR) and interpret 17. Interpret blood tests in the context of laboratory evidence for tuberculosis. Discuss the various samples for demonstrating the organism e.g. Gastric Aspirate, Sputum, CSF, FNAC.	

4.	Skills Lab	02	(PE 15.6, 15.7, 19.9, 19.13, 20.3, 24.15, 24.16, 24.17, 26.10, 27.20, 29.17, 30.23)	1. Demonstrate the steps of inserting an IV cannula in a model 2. Demonstrate the steps of inserting an interosseous line in a mannequin 3. Demonstrate the correct administration of different vaccines in a mannequin. 4. Describe the components of safe vaccine practice– Patient education/ counselling; adverse events following immunization, safe injection practices, documentation and Medico-legal implications 5. Perform Neonatal resuscitation in a manikin	AETCOM –PE19.9
				6. Perform NG tube insertion in a manikin 7. Perform IV cannulation in a model 8. Demonstrate the technique of liver biopsy or perform Liver Biopsy in a simulated environment. 9. Demonstrate performance of bone marrow aspiration in manikin 10. Perform in a mannequin lumbar puncture. Discuss the indications, contraindication of the procedure	
5.	Genito-Urinary system	02	Hypertension in children (PE 21.17)	1. Definition 2. Etiopathogenesis 3. Grading 4. Clinical features 5. Management 6. Complications 7. Acute severe hypertension	
			Voiding Disorders (PE 21.15)	1. Discuss & Enumerate the referral criteria for children with genitourinary disorder 2. Counsel & educate patients regarding referral	

6.	Cardiovascular system: Heart disease	04	Congestive cardiac failure in infants and children (PE 23.3)	1. Etiology 2. Pathogenesis 3. Clinical presentation 4. Management	
			Acyanotic congenital heart diseases (PE 23.1)	VSD, ASD and PDA 1. Etiology 2. Hemodynamic changes 3. Clinical features 4. Investigations 5. Management	
			Cyanotic congenital heart diseases (PE 23.2)	1. Classify Cyanotic congenital heart disease Fallot's Physiology 2. Etiology 3. Hemodynamic changes 4. Clinical features 5. Investigations 6. Management	
			Acquired Heart Disease (PE 23.4, 23.5, 23.6)	Infective endocarditis 1. Etio-pathogenesis 2. Clinical features 3. Diagnosis 4. Management Acute rheumatic fever 1. Etio-pathogenesis 2. Clinical features 3. Diagnosis 4. Management and prevention 5. Complications	
7.	Pediatric Emergencies – Common Pediatric Emergencies	03	Shock in children (PE 27.5)	1. Definition 2. BP regulation 3. Pathophysiology 4. Classification 5. Monitoring 6. Management	
			Status epilepticus (PE 27.6, 30.9)	1. Definition 2. Etiology 3. Approach to a child with status epilepticus 4. Evaluation 5. Management	
			Unconscious child and Coma (PE 27.8)	1. Definition 2. Etiopathogenesis 3. Evaluation 4. Management 5. Brain death	

8.	Care of the Normal Newborn, and High-risk Newborn	04	Care of low birth weight (LBW) babies (PE 20.11)	1. Definition 2. Etiology 3. Explain the terminologies– IUGR/ SGA 4. Clinical features 5. Issues in LB W care 6. Feeding in LBW babies 7. Management of LBW babies 8. Growth monitoring of LBW babies	
			Neonatal hypoglycemia & hypocalcaemia (PE 20.13,20.14)	Hypoglycemia and hypocalcaemia 1. Definition 2. Etiology 3. Clinical features 4. Management	
			Neonatal Seizures (PE 20.15)	1. Etiology 2. Clinical features 3. Management	
			Perinatal infections (PE 20.17)	TORCH/Tuberculosis/ Hep B/ Varicella 1. Etiology 2. Transmission 3. Clinical features 4. Management	
9.	Anemia and other Hemato-oncologic disorders in children	02	Hemolytic anemia (PE 29.4)	1. Etiology 2. Classification 3. Approach to a child with hemolytic anemia 4. Management 5. Overview of HS, AIHA and HUS	
			Thalassemia and Sickle Cell Anemia (PE 29.4)	1. Etiology 2. Clinical features 3. Lab investigations 4. Management in cl Iron Chelation therapy 5. Complications	

10.	Acute and chronic liver disorders	02	Acute liver disease & Fulminant hepatic failure (PE 26.1, 26.2)	Acute hepatitis in children–Viral (Hep A,B,C), Autoimmune and Wilsons disease 1. Etio-pathogenesis 2. Clinical features 3. Management Fulminant Hepatic Failure in children 1. Etio-pathogenesis 2. Clinical features 3. Management	
			Chronic liver disease & Portal hypertension (PE26.3,26.4,26.11, 26.12)	Chronic liver diseases in children 1. Etio-pathogenesis 2. Clinical features 3. Evaluation 4. Complications – hepatic encephalopathy and ascites 5. management Portal Hypertension in children 1. Etio-pathogenesis 2. Clinical features 3. Management 4. Complications	
11.	Respiratory system	01	Pneumonia and ARDS (PE 27.3,27.4)	1. Etio-pathogenesis 2. Clinical features 3. Diagnosis 4. Management 5. Prevention	
4.	Malabsorption	01	Malabsorption (PE 25.1)	1. Etio-pathogenesis 2. Clinical presentation 3. Management 4. Overview of celiac disease	
5.	VIVA VOICE	04		1. Instruments 2. Drugs 3. Nutrition 4. Immunization	
TOTAL		35			

III MBBS – Part II

Theory III (Part II) MBBS (20 hours)

S. No	Topic	Hours	Lectures (Competency No.)	SLO	Horizontal Integration
1.	Care of the Normal Newborn, and High-risk Newborn	05	Birth asphyxia (PE 20.7)	1. Definition 2. Etiology 3. Clinical features 4. Management 5. Prevention	
			Respiratory distress in newborn (PE 20.8)	RDS/TTNB/MAS 1. Etiology 2. Clinical features in cl scoring systems 3. Management	
			Birth injuries & Hemorrhagic disease of newborn (HDN) (PE 20.9, 20.10)	Birth Injuries 1. Etiology 2. Clinical features 3. Management HDN 1. Definition and classification 2. Etiology 3. Clinical features 4. Management 5. Prevention	
			Neonatal Sepsis (PE 20.16)	1. Classification 2. Etiology 3. Clinical features 4. Investigations 5. Management	
			Surgical conditions in newborn (PE 20.20)	TEF, esophageal atresia, anal atresia, cleft lip and palate, congenital diaphragmatic hernia 1. Etiology 2. Clinical presentation 3. Management 4. Causes of acute abdomen in neonates	
2.	Genito-Urinary system	03	UTI (PE 21.1)	1. Etiology and predisposing factors 2. Clinical features 3. Diagnosis 4. Management 5. VUR	

			Approach to hematuria& Acute glomerulonephritis (PE 21.2, 21.4)	Hematuria 1. Definition 2. Diagnostic evaluation 3. Referral criteria Acute Glomerulonephritis 1. Definition 2. Etiology 3. Clinical features of PSGN 4. Management of PSGN 5. Complications	
			Acute kidney injury (AKI) and Chronic kidney disease (CKD) (PE 21.5, 21.6)	1. Definition and classification 2. Etiology and pathophysiology 3. Approach to a child with AKI 4. Management 5. Complications 6. Renal replacement therapy	
3.	Approach to and recognition of a child with possible rheumatologic problem	02	Approach to Rheumatological Problems incl JIA and SLE (PE 22.1)	1. Enumerate the common Rheumatological problems in children. 2. Approach to a child with arthritis 3. Referral criteria for a child with possible rheumatologic problem JIA/SLE 1. Definition 2. Etiopathogenesis 3. Clinical sub types / Clinical features 4. Diagnosis 5. Management	
			Vasculitic disorders in children (PE 22.3)	Enumerate common Vasculitic disorders in children and its classification Kawasaki disease/HSP 1. Etiology 2. Clinical features 3. Diagnosis 4. Management	

4.	Anemia and other Hemato-oncologic disorders in children	02	Thrombocytopenia and Hemophilia (PE 29.6, 29.7)	Thrombocytopenia 1. Causes of thrombocytopenia 2. Etiology of ITP 3. Clinical features and management of ITP Hemophilia 1. Approach to a child with bleeding disorder 2. Etiology and types of hemophilia 3. Clinical features and management of hemophilia	
			Leukemia, Lymphomas and Solid Tumors in children (PE 29.8, 29.9, 21.17)	ALL/Lymphoma/ Wilm's Tumor 1. Etiology 2. Clinical features 3. Management	
5.	Systemic Pediatrics- Central Nervous system	08	Meningitis in children (PE 30.1, 30.2)	1. Etiopathogenesis 2. Clinical features 3. Lab investigations 4. Management 5. Prevention 6. Differentiate between Bacterial, Viral and TB Meningitis 7. Approach to a child with acute febrile encephalopathy	
			Hydrocephalus (PE 30.3)	1. Etiopathogenesis 2. Clinical features 3. Investigations 4. Complications 5. Management 6. Overview of IIH	
			Microcephaly and Neural tube defects (PE 30.4, 30.5)	1. Etiopathogenesis 2. Classification/Types 3. Clinical features 4. Complications 5. Management	
			Infantile hemiplegia / Stroke (PE 30.6)	1. Etiopathogenesis 2. Clinical features 3. Investigations 4. Management	

			Epilepsy in children (PE 30.8)	1. Definition 2. Pathogenesis 3. Types of Epilepsy 4. Clinical presentation 5. Management 6. Overview of status epilepticus	
			Muscular dystrophy (PE 30.14)	DMD/BMD 1. Etiology 2. Clinical features 3. Differential diagnosis 4. Evaluation 5. Management	
			Ataxia in children (PE 30.15)	1. Definition 2. Etiology 3. Clinical features 4. Differential Diagnosis 5. Management	
			Approach to headache in children (PE 30.16)	1. Pathophysiology of headache 2. Approach to a child with headache 3. Types of Headache 4. Management	
TOTAL		20			

Self-Directed Learning III (Part II) MBBS (10 hours)

S. No	Topic	Hours	Lectures (Competency No.)	SLO	Horizontal Integration
1.	Systemic Pediatrics- Central Nervous system	04	Floppy infant (PE 30.12)	1. Etiology 2. Clinical features 3. Differential diagnosis 4. Evaluation 5. Management	
			Febrile seizures (PE 30.7)	1. Definition 2. Types 3. Etio pathogenesis 4. Clinical features 5. Investigations 6. Complications 7. Management	
2.	Care of the Normal Newborn, and High-risk Newborn	02	Neonatal Hyperbilirubinemia (PE 20.19)	1. Physiological vs pathological jaundice 2. Etiology 3. Clinical features 4. Approach to a neonate with jaundice 5. Management 6. Follow-up	
3.	Genito-Urinary system	02	Approach to Proteinuria	Proteinuria 1. Definition 2. Diagnostic evaluation 3. Referral criteria	
			Nephrotic syndrome (PE 21.3)	Nephrotic Syndrome 1. Definition 2. Etiology 3. Terminologies – Remission/Relapse/Steroid dependence/ Steroid resistance 4. Clinical features 5. Management 6. Complications 7. SDNS/SRNS/Congenital nephrotic syndrome	

4.	Respiratory system	02	Asthma in children (PE 28.19, 28.20, 31.5, 31.7, 31.8, 31.10)	1. Pathophysiology incl Triggers 2. Clinical features 3. Diagnosis and differential diagnosis 4. Management 5. Inhalational therapy 6. Monitoring and modification of treatment 8. Management of acute exacerbation of bronchial asthma	
TOTAL		10			

AETCOM Competencies for Third Year (Part II)

Paediatrics	4.9 A	The student should be able to : Identify ,discuss and defend medico -legal ,socio cultural , professional and ethical issue pertaining to medical negligence.
	4.9 B	The student should be able to : Identify, discuss and defend medico – legal , socio- cultural, professional and ethical issues pertaining to malpractice.

Electives -

These will be in 2 blocks of 15 days each. 1st block after annual exam of III MBBS part 1 and 2nd block after the end of 1st elective.

- elective choices will be made available to the learners in the beginning of the academic year
- The learner must submit a learning log book at the end of the elective.
- 75% attendance in the electives and submission of log book maintained during electives is required for eligibility to appear in the final MBBS examination. (Off. NExT whenever it is applicable)

Evaluation –

Eligibility to appear for professional exam:

A) **Attendance :**

There will be a minimum of 75% attendance in theory & 80% in practical for eligibility to appear for university examination.

Student must have minimum of 75% attendance in theory & 80% - in practical in each phase.
Student must have at least 75% attendance in elective.

B) **Internal Assessment :** will be based on day to day assessment. Student must participate in learning process including assignment, seminar, clinical case presentation, case discussion, Quiz, museum study, SDL. Internal assessment marks will not be added to summative assessment.

C) Student should complete the required certifiable competencies for that phase of training & complete the log book.

D) Regular periodic examination will be conducted throughout course. Three internal theory examination. Including preliminary examination will be conducted. Three practical internal assessments will be conducted at the end of each clinical posting in third professional year and one preliminary exam.

A student must secure at least 40/60% marks of the total marks (combined in theory & clinical not less than 40 % marks in theory & 60% practical separately) for internal assessment in order to be eligible for appearing in final university examination.

INTERNAL ASSESSMENT PATTERN

1. There shall be 3 internal assessment examinations in Pediatrics including Prelim.
2. The suggested pattern of question paper for internal assessment examinations, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.
3. Internal assessment marks for theory and practical will be converted to out of 100 (theory) + 100 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University. **Conversion Formula for calculation of marks in internal assessment examinations.**

	Theory	Practical
Phase II	-	-
Phase III/I	50	50
Phase III/II	50	50
Prelim	100	100
Total	200	200
Conversion out of	100	100
Eligibility criteria after conversion	50	50
	Combined theory + Practical = 60 : 40	

INTERNAL ASSESMENT:

1. Logbook prepared as per guidelines of National Medical Commission for implementation of competency based curriculum for phase III MBBS student in the subject of paediatrics.
2. Certifiable skill competency be performed and checked by batch teacher.
3. Students are expected to write reflections on ATECOM modules,
4. Students are assessed through 2 theory (PCT) internal assessment one preliminary exam. Internal assessment of practical will be done through 2 ward leaving examination and one preliminary exam.
5. The internal assessment will be based on following method, mark distribution.

NOTE --

1. Students must secure at least 50% marks of the total marks(combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in order to be eligible for appearing at the final University examination of that subject.
2. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

3. Remedial measures

A student whose has deficiency(s) in any of the 3 criteria that are required to be eligible to appear in university examination, should be put into remedial process as below:

- *During the course:* If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book in quarterly/ six monthly monitoring, the students/parents must be intimated about the possibility of being detained much before the final university examination, so that there is sufficient time for remedial measures. These students should be provided remedial measures as and when needed to improve IA. Any certifiable competency/ IA marks deficiency should be attended with planned teaching/tests for them. Student should complete there medial measures and it should be documented. **Inspire of all above measures, if student is still not meeting the criteria to be eligible for regular exam he shall be offered remedial forth same batch supplementary exam. For attendance, he will be allowed remedial measures ONLY IF attendance is more than 60% for each component.**

At the end of phase: If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book at the end of regular classes in a phase, the student is detained to appear in regular university examination of that batch.

- Remedial classes can be planned for students missing regular classes on genuine grounds, thus ensuring that all certifiable competencies are achieved.
- Students who have less than 75% attendance in theory and 80% attendance in practical cannot appear for University examination, however; they may appear for Supplementary examination provided they attend the remedial classes organized between University Sit and Supplementary exam. Students who have attendance 60% or above shall be eligible for such remedial classes.

Internal Assessment Marks Subject – Pediatrics**Marks Distribution**

Phase		
	Theory	Practical
Second MBBS	-	EOP Practical Examination may be conducted. However, these marks shall not be added to the Internal Assessment

3 rd Year (III MBBS, PART I)				
Phase	I-Exam (January)			
	Theory	Practical	Total Marks	
III/I MBBS	50	50	100	

4 th Year (III MBBS, PART II)						
Phase	II-Exam (May)			III-Exam (Preliminary examination) (November)		
	Theory	Practical	Total Marks	Theory	Practical	Total Marks
III/II MBBS	50	50	100	100	100	200

Pediatrics

Internal Assessment – I, II

1. Theory – I,II

Question No.	Type of Question	No.of Question	Marks
1	MCQ	10	10
2	SAQ	3	15
3	SAQ	5	15
4	LAQ	1	10
TOTAL			50

2. PRCTICAL EXAMINATION:-

Subject: Pediatrics Practical (IA – I, II)				
Case	OSCE 1	OSCE 2	Journal & log book	Practical Total marks
30	05	05	10	50

Internal assessment examination Format / Skeleton Question Paper Theory I and II Paediatrics

SECTION "A" MCQ

Instructions: 1) Put ☐ in the appropriate box below the question number once only
 2) Use blue ball point pen only
 3) Each question carries One mark.
 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (10 Marks) (Scenario based)

1. Multiple Choice Questions (Total 10 MCQ of One mark each) (10 X 1 = 10)
 a) b) c) d) e) f) g) h) i) j)

SECTION B

Instructions:

1. Use blue/black ball point pen only
2. Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.
3. All questions are compulsory
4. The number to the right indicates full marks.
5. Draw diagrams wherever necessary.
6. Use a common answer book for all sections

SECTION "B" (20 Marks)

2. **Short Answer Question (Five marks each) (Any 3 out of 4)** (5x3 = 15)
 a) b) c) d)
3. **Short Answer Question (Five marks each) (Any 5 out of 6)** (3x5=15)
 a) b) c) d) e) f)
4. **Long Answer Question** (10x1 = 10)

UNIVERSITY EXAM AND PRELIMINARY EXAM MARKS DISTRIBUTION

TYPE OF EXAM		MAX. MARKS	MINI. MARKS FOR PASSING
Summative			
Theory- One paper	I	100	50
Practical		100	50
Total		200	100

Students must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned in university exam, so student must secure combined Theory + Practical 60 : 40 marks for passing university exam.

PATTERN OF THEORY EXAM IN FINAL EXAM INCLUDING DISTRIBUTION OF MARKS, QUESTIONS**AND TIME:-**

- One theory paper :- 100 marks
 - Total time duration :- 3 hours
 - Pattern of question:- Two sections in papers
 - Content :- **Complete syllabus of Paediatric-**
 - Section A will be of MCQ – 20 marks
 - Section B will carry 80 marks. Will consist of
 - a) One Long answer question - 10 Mark
 - b) Five Reasoning question - 15 Marks
 - c) Three Short answer question - 15 Marks
 - d) Four Short Note - 20 Marks
 - e) Five Short Note - 20 Marks
- (One from ATCOM mode)

Preliminary Internal Assessment Theory & Practical Examinations III - Paediatrics

Prelim Theory

Question Paper pattern –

Question No.	Type of Question	No.of Question	Marks	Minimum Passing Marks
1	MCQ	20	20	
2	LAQ	1	10	
3	SAQ	5	15	
4	SAQ	3	15	
5	SAQ	4	20	
6	SAQ	4	20	
TOTAL			100	50

Question 6- AETCOM module in section B

Prelim Practical

#OSCE Stations to include Signs of General examinations, Local examinations, Psychomotor skills and Communication skills., history taking of a particular symptom; nutrition history, developmental history, immunization history.

Subject: Pediatrics Practical (Prelims)						
Long Case (Including clinical skills demonstration)	Short Case (Including communication skills)	OSCE (4 stations x 5 marks each)	Viva	Journal & log book	Practical Total marks	Minimum passing Marks
30	20	20	20	10	100	50

OSCE1–ClinicalSkills, OSCE2–Anthropometryassessment ,OSCE3–
Certifiableprocedural skills , OSCE 4 – AETCOM related skills

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Preliminary Theory
Examination Paediatrics
FORMAT / SKELETON OF QUESTION PAPER

Instructions: 1) Put ☐ in the appropriate box below the question number once only
 2) Use blue ball point pen only
 3) Each question carries One mark.
 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

Q.1 Multiple Choice Questions (Scenario based) (Total 10 MCQ of One mark each) (20 X 1 = 20)	20 Marks
a) b) c) d) e) f) g) h) i) j)	
k) l) m) n) o) p) q) r) s) t)	
Q.2 Long Answer Question (one)	10 Marks
Q.3 Reasoning question (attempt any 5 out of 6) (3 marks each) (3x5)	15 Marks
Q.4 Short Notes (applied aspect) (attempt any 3 out of 4) (5 marks each) (3x5)	15 Marks
Q.5 Short Notes (attempt any 4 out of 5) (Five marks each) (4x5)	20 Marks
Q.6 Short Notes (Four) (4x5) (One subpart from ATECOM)	20 Marks

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University Final Theory &
Practical Examination Paediatrics

University Final Examination Theory question Paper pattern –

Question No.	Type of Question	No. of Question	Marks	Minimum Marks
1	MCQ	20	20	
2	LAQ	1	10	
3	SAQ	5	15	
4	SAQ	3	15	
5	SAQ	4	20	
6	SAQ	4	20	
TOTAL			100	50

Question 6- AETCOM module in section B

UNIVERSITY FINAL PRACTICAL EXAMINATION:-

LONG CASE	Short case	OSCE (4 station x 5 marks each)	viva	Total	Minimum marks for Practical
40	20	20	20	100	50

OSCE1–ClinicalSkills, OSCE2–Anthropometry assessment, OSCE3–Certifiable procedural skills, OSCE 4 – AETCOM related skills

Criteria for passing in Paediatric subject -

Student must secure at least 50% marks of the total marks of University Examination in theory and practical (combined in theory and practical not less than 40% marks in theory and practical separately)

- There shall be no grace mark to be considered for passing in an examination.

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Final Theory
Examination Paediatrics
FORMAT / SKELETON OF QUESTION PAPER

Instructions: 1) Put ☐ in the appropriate box below the question number once only
 2) Use blue ball point pen only
 3) Each question carries One mark.
 4) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

Q.1 Multiple Choice Questions (Scenario based) (Total 10 MCQ of One mark each) (20 X 1 = 20)	20 Marks
a) b) c) d) e) f) g) h) i) j)	
k) l) m) n) o) p) q) r) s) t)	
Q.2 Long Answer Question (one)	10 Marks
Q.3 Reasoning question (attempt any 3 out of 4) (3 marks each) (3x5)	15 Marks
Q.4 Short Notes (applied aspect) (attempt any 3 out of 4) (5 marks each) (3x5)	15 Marks
Q.5 Short Notes (attempt any 4 out of 5) (Five marks each) (4x5)	20 Marks
Q.6 Short Notes (Four) (4x5) (One subpart from ATECOM)	20 Marks



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