THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MD 0524] **MAY 2024** **Sub. Code: 4021**

M.D. DEGREE EXAMINATION

BRANCH VII – PAEDIATRICS

PAPER I – BASIC SCIENCES AS APPLIED TO PAEDIATRICS

Q.P. Code: 204021

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

Write notes on:

I. ANATOMY: **(4 x 5 = 20)**

1. Development of diaphragm.
2. Biliary atresia.
3. Tetralogy of fallot.
4. Posterior urethral valve.

II. PHYSIOLOGY: **(4 x 5 = 20)**

1. Biological changes during adolescence.
2. Determinants of plasma osmolality.
3. Vitamin A metabolism.
4. Lactose intolerance.

III. BIO-CHEMISTRY: **(3 x 5 = 15)**

1. Insulin resistance and PCOS in adolescence.
2. Thyroid function test.
3. Applied aspects of CSF analysis in meningitis.

IV. PHARMACOLOGY: **(3 x 5 = 15)**

1. Deferasirox.
2. Nirsevimab
3. Newer anti malarial drugs

V. PATHOLOGY: **(3 x 5 = 15)**

1. Stages of hepatic encephalopathy.
2. Macrophage activation syndrome
3. Compartment syndrome.

VI. MICROBIOLOGY: **(3 x 5 = 15)**

1. Pediculosis.
2. Gut microbiome in pediatrics.
3. Clinical features suggestive of T cell defect.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MD 1224] **DECEMBER 2024** **Sub. Code: 4021**

(OCTOBER 2024 EXAM SESSION)

M.D. DEGREE EXAMINATION

PAEDIATRICS

PAPER I – BASIC SCIENCES AS APPLIED TO PAEDIATRICS

Q.P. Code: 204021

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

Write notes on:

I. ANATOMY: **(4 x 5 = 20)**

1. Development of interventricular septum and its congenital anomalies.
2. Course of Facial Nerve and its clinical relevance.
3. Neural Crest Cells and its derivatives.
4. Disorders in the development of Urinary bladder and urethra.

II. PHYSIOLOGY: **(4 x 5 = 20)**

1. Monro-Kellie Hypothesis and its clinical significance.
2. Pulmonary Function Tests.
3. Juxta Glomerular Apparatus.
4. Physiology of lactation.

III. BIO-CHEMISTRY: **(3 x 5 = 15)**

1. Metabolism of amino acid Tyrosine.
2. Role of Kidneys in Acid- Base balance.
3. Heme Synthesis and its disorders.

IV. PHARMACOLOGY: **(3 x 5 = 15)**

1. Lacosamide.
2. Intravenous Immunoglobulins in Paediatric Practice.
3. Paracetamol Toxicity.

V. PATHOLOGY: **(3 x 5 = 15)**

1. Components of Tuberculous granuloma with diagram.
2. Karyotyping and Genetics of Downs Syndrome.
3. HIDA Scan.

VI.MICROBIOLOGY: **(3 x 5 = 15)**

1. Serological Markers of Hepatitis B.
2. Chandipura Virus.
3. Microbiological Aspects of Primary Amoebic Encephalitis.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MD 0525] **MAY 2025** **Sub. Code: 4021**

M.D. DEGREE EXAMINATION

PAEDIATRICS

PAPER I – BASIC SCIENCES AS APPLIED TO PAEDIATRICS

Q.P. Code: 204021

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

Write notes on:

I. ANATOMY: **(4 x 5 = 20)**

1. Development of Inter Atrial Septum & Anatomical types of Atrial Septal defects.
2. Meckel's diverticulum.
3. Branchial arches.
4. Blood supply of Internal capsule.

II. PHYSIOLOGY: **(4 x 5 = 20)**

1. Foetal Erythropoiesis.
2. Renal Function Test.
3. Brain – Gut – Adipose Axis in regulation of energy homeostasis.
4. Vitamin D metabolism.

III. BIO-CHEMISTRY: **(3 x 5 = 15)**

1. Short Chain Fatty acids.
2. Anion Gap.
3. Metabolic screening in newborn.

IV. PHARMACOLOGY: **(3 x 5 = 15)**

1. Pharmacotherapy in childhood obesity.
2. Emicizumab.
3. Long Acting Insulin.

V. PATHOLOGY: **(3 x 5 = 15)**

1. Lupus Nephritis.
2. Osmotic fragility test.
3. Pathophysiology of Refeeding syndrome.

VI.MICROBIOLOGY: **(3 x 5 = 15)**

1. Mumps.
2. Nosocomial infections.
3. Newer diagnostic methods of Childhood Tuberculosis.

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THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[MD 1025] **OCTOBER 2025** **Sub. Code: 4021**

M.D. DEGREE EXAMINATION

PAEDIATRICS

PAPER I – BASIC SCIENCES AS APPLIED TO PAEDIATRICS

Q.P. Code: 204021

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

Write notes on:

I. ANATOMY: **(4 x 5 = 20)**

1. Formation and circulation of CSF. Anatomical basis for various forms of obstructive hydrocephalus.
2. Endocardial Cushion Defect.
3. Urinary bladder innervation and its applied anatomy.
4. Visual pathway and its disturbances.

II. PHYSIOLOGY: **(4 x 5 = 20)**

1. Functional Residual Capacity.
2. Physiology of Pain.
3. Posterior Pituitary hormones and Water regulation.
4. Physiologic response to thermal stress.

III. BIO-CHEMISTRY: **(3 x 5 = 15)**

1. PIVKA.
2. Thyroid Hormone biosynthesis and its regulation.
3. Urea cycle and its clinical relevance.

IV. PHARMACOLOGY: **(3 x 5 = 15)**

1. Iron chelation therapies.
2. Enzyme Replacement Therapy in Paediatrics.
3. Extended Half-life coagulation factors.

V. PATHOLOGY: **(3 x 5 = 15)**

1. Platelet Function Tests.
2. Pathophysiology of shock in children.
3. Role of FNAC in paediatrics.

VI.MICROBIOLOGY: **(3 x 5 = 15)**

1. Primary and secondary Response following Vaccination.
2. Tests of Immune function.
3. Principle of MALDITOF and VITEK systems.

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THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[MD 0526] **MAY 2026** **Sub. Code: 4021**

M.D. DEGREE EXAMINATION

PAEDIATRICS

PAPER I – BASIC SCIENCES AS APPLIED TO PAEDIATRICS

Q.P. Code: 204021

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

Write notes on:

I. ANATOMY: **(4 x 5 = 20)**

1. Development of kidney and various congenital anomalies.
2. Rotation of Gut and its anomalies.
3. Brachial plexus and its birth injuries.
4. Portal vein.

II. PHYSIOLOGY: **(4 x 5 = 20)**

1. Eisenmenger Physiology.
2. Embryonic and Foetal hemoglobin.
3. Spirometry in pediatric practice.
4. Iron metabolism.

III. BIO-CHEMISTRY: **(3 x 5 = 15)**

1. Amylase Resistant Starch.
2. Phenylketonuria.
3. Normal anion gap metabolic acidosis.

IV. PHARMACOLOGY: **(3 x 5 = 15)**

1. Pharmacotherapy for childhood Migraine.
2. Luspatercept.
3. Intranasal Corticosteroids.

V. PATHOLOGY: **(3 x 5 = 15)**

1. Pathophysiology of Hemolytic Uremic syndrome.
2. Pathological findings in Childhood Acute Myeloid Leukemia.
3. Pathophysiology of Necrotizing enterocolitis.

VI. MICROBIOLOGY: **(3 x 5 = 15)**

1. Catheter associated urinary tract infection.
2. Anti-microbial Stewardship.
3. Invasive Fungal Infections.

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