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

[MD 0524] **MAY 2024** **Sub. Code: 4025**

M.D. DEGREE EXAMINATION

BRANCH X – ANAESTHESIOLOGY

PAPER I – BASIC SCIENCES RELATED TO ANAESTHESIOLOGY

Q.P. Code: 204025

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

I. Elaborate on: **(2 x 15 = 30)**

1. Formation and branches of brachial plexus.
   a) Various approaches to block brachial plexus.
   b) Failed block- Rescue techniques.

2. Elaborate on coronary blood flow.
   a) Determinants of myocardial oxygen demand-supply.
   b) Assessment of ventricular function.

II. Write notes on: **(10 x 7 = 70)**

1. Cardiac output monitoring.
2. Functional analysis of Bain circuit.
3. Interpretation of TOF (Train of four).
4. Point of Care tests for coagulation.
5. Pressure-Volume loop.
6. EtCO2 (End tidal carbon di oxide).
7. Alveolar gas equation.
8. Desflurane.
9. Pulmonary function tests.
10. Anaphylaxis management.

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

[MD 1224] **DECEMBER 2024** **Sub. Code: 4025**

(OCTOBER 2024 EXAM SESSION)

M.D. DEGREE EXAMINATION

ANAESTHESIOLOGY

PAPER I – BASIC SCIENCES RELATED TO ANAESTHESIOLOGY

Q.P. Code: 204025

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

I. Elaborate on: **(2 x 15 = 30)**

1. Describe in detail the anatomy of spinal cord and its blood supply.

2. Define Hypoxia, what are the types of hypoxia and its effects on various systems of the body.

II. Write notes on: **(10 x 7 = 70)**

1. William MacEwen.
2. Blood brain barrier.
3. Coanda effect.
4. Classification of peripheral nerves.
5. Left ventricular end diastolic pressure (LVEDP).
6. Context sensitive half time.
7. Fresh gas decoupling.
8. Respiratory alkalosis.
9. Emergence reaction.
10. Newer airway gadgets.

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

[MD 0525] **MAY 2025** **Sub. Code: 4025**

M.D. DEGREE EXAMINATION

ANAESTHESIOLOGY

PAPER I – BASIC SCIENCES RELATED TO ANAESTHESIOLOGY

Q.P. Code: 204025

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

I. Elaborate on: **(2 x 15 = 30)**

1. Classification of Mapleson Breathing systems and its functional analysis.

2. a) Cerebral Physiology and Cerebral Blood flow.
   b) Effects of Anaesthesia on Cerebral Blood flow.

II. Write notes on: **(10 x 7 = 70)**

1. Evoked potentials.
2. Newer antiplatelet drugs.
3. Midazolam.
4. Vital capacity.
5. Activated clotting time.
6. Seldinger's technique.
7. Patient controlled analgesia.
8. Venous air embolism treatment.
9. Combined spinal epidural analgesia.
10. Post intubation and croup.

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

[MD 1025] **OCTOBER 2025** **Sub. Code: 4025**

M.D. DEGREE EXAMINATION

ANAESTHESIOLOGY

PAPER I – BASIC SCIENCES RELATED TO ANAESTHESIOLOGY

Q.P. Code: 204025

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

I. Elaborate on: **(2 x 15 = 30)**

1. a) Anatomy of Caudal Epidural space.
   b) Complications of Neuraxial blockade.

2. a) Mechanics of Ventilation.
   b) Ventilation and perfusion relationship.
   c) Effects of Anaesthesia in Pulmonary mechanics.

II. Write notes on: **(10 x 7 = 70)**

1. Valsalva maneuver.
2. Succinyl choline.
3. LMA and Insertion techniques.
4. Normovolemic hemodilution.
5. Antifibrinolytic agents.
6. Anaesthesia gas analysis.
7. Minimum alveolar concentration.
8. Hemolytic reactions.
9. Functional analysis of Jackson Rees circuit.
10. Desflurane.

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

[MD 0526] **MAY 2026** **Sub. Code: 4025**

M.D. DEGREE EXAMINATION

ANAESTHESIOLOGY

PAPER I – BASIC SCIENCES RELATED TO ANAESTHESIOLOGY

Q.P. Code: 204025

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

I. Elaborate on: **(2 x 15 = 30)**

1. Describe the anatomy of kidney and discuss counter current mechanism, Renal function tests and their importance in anaesthesia.

2. Describe pathway of pain in labour. Methods of pain relief in labour (Labour analgesia).

II. Write notes on: **(10 x 7 = 70)**

1. Oxygen cascade.
2. John Snow.
3. Double lumen tube.
4. Laplace Law.
5. Cisatracurium.
6. Tec 6 vaporizer.
7. Circle of Willis.
8. Denitrogenation.
9. Bispectral index.
10. Functional residual capacity.

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

[MD 0926] SEPTEMBER 2026 Sub. Code: 4025

M.D. DEGREE EXAMINATION

ANAESTHESIOLOGY

PAPER I – BASIC SCIENCES AS APPLIED TO ANAESTHESIOLOGY

Q.P. Code: 204025

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

I. Elaborate on: **(2 x 15 = 30)**

1. Elaborate on Anatomy and Physiology of Neuro muscular junction and discuss in detail about Neuro muscular monitoring during Anaesthesia.

2. Elaborate on Anatomy of Hepatic Circulation – Regulation, Factors affecting it and discuss in detail about Liver Function Tests and its Anaesthetic significance

II. Write notes on: **(10 x 7 = 70)**

1. Oxygen Dissociation Curve.
2. Venturi principle.
3. Pressurising and Pumping effect.
4. Hypoxic Pulmonary Vasoconstriction and its effect on Anaesthesia.
5. Anatomy of Foetal circulation and changes at Birth.
6. James Young Simpson.
7. Heat Moisture Exchanger.
8. Sugammadex.
9. Liquid Oxygen.
10. Surfactant.

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