

April-2001

[KP 157]

Sub. Code : 2057

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch X — Anaesthesiology

Part II

Paper I — APPLIED BASIC SCIENCES RELATED TO
ANAESTHESIA INCLUDING PHYSICS IN
ANAESTHESIA, HISTORY OF ANAESTHESIA

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. With the help of a diagram, discuss the physiology of neuromuscular transmission. (25)
 2. Classify vaporisers. Draw a diagram and discuss how vapour concentration is maintained in Tec 5 vaporiser. (25)
 3. Write short notes on : (5 × 10 = 50)
 - (a) Desflurane
 - (b) Mandibular nerve block
 - (c) Sir Robert Macintosh
 - (d) Closing volume
 - (e) Ropivacaine.
-

November-2001

[KE 157]

Sub. Code : 2057

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch X — Anaesthesiology

Part II

Paper I — APPLIED BASIC SCIENCES RELATED TO
ANAESTHESIA INCLUDING PHYSICS IN
ANAESTHESIA, HISTORY OF ANAESTHESIA

Time : Three hours

Maximum : 100 marks.

Answer ALL questions.

1. Give an account of the Blood supply of the brain. Describe briefly the factors which govern and alter the blood supply of brain in conscious and unconscious patients. (25)
 2. Describe the anatomy of Larynx. Discuss the changes in vocal cords in various palsys. (25)
 3. Write short notes on : (5 × 10 = 50)
 - (a) First and Second Hyderabad Chloroform commissions.
 - (b) Arthur E. Guedel.
 - (c) Venturi Principle.
 - (d) Beta adrenergic blocking drugs.
 - (e) Acidotic breathing.
-

March-2002

[KG 157]

Sub. Code : 2057

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch X — Anaesthesiology

Part II

Paper I — APPLIED BASIC SCIENCES RELATED TO
ANAESTHESIA INCLUDING PHYSICS IN
ANAESTHESIA, HISTORY OF ANAESTHESIA

Time : Three hour

Maximum : 100 marks

Answer ALL questions.

1. Describe the anatomy of Coronary arteries.
Mention the factors that influence Coronary blood flow.

2002

(25)

2. Describe the physiology of Neuro-muscular
transmission and methods of neuro-muscular block. (25)

3. Write briefly on : (5 × 10 = 50)

- (a) 150th year of Anaesthesia.
- (b) John Snow.
- (c) Hoffman's Degradation.
- (d) Hydrocephalus.
- (e) Second Gas Effect.

September-2002

[KH 157]

Sub. Code : 2057

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch X — Anaesthesiology

Part II

Paper I — APPLIED BASIC SCIENCES RELATED TO
ANAESTHESIA INCLUDING PHYSICS IN
ANAESTHESIA, HISTORY OF ANAESTHESIA

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Describe the anatomy of the internal jugular vein, and the technique of cannulation. Enumerate the indications uses and complications. (25)
 2. Describe the sensory nerves of the fingers and hand. By what methods these nerves may be blocked? (25)
 3. Write short notes on : (5 × 10 = 50)
 - (a) Preventing Anaesthetic Accidents
 - (b) John Saveringhaus
 - (c) Airway resistance
 - (d) Hiccup
 - (e) Rectus sheath block.
-

April-2003

[KI 157]

Sub. Code : 2057

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch X — Anaesthesiology

Part II

Paper I — APPLIED BASIC SCIENCES RELATED TO
ANAESTHESIA INCLUDING PHYSICS IN
ANAESTHESIA, HISTORY OF ANAESTHESIA

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. With the help of diagram outline the anatomy of brachial plexus, describe any one type of brachial plexus block, detailing its advantages over other blocks. (25)
 2. Define intracranial pressure, what are the factors that control intracranial pressure and discuss the methods used to control intracranial pressure. (25)
 3. Write short notes on : (5 × 10 = 50)
 - (a) Static electricity
 - (b) SI units
 - (c) Exponential elimination
 - (d) Mr. WPTG Merton
 - (e) Bispectral index.
-

[KL 157]

Sub. Code : 2057

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch X — Anaesthesiology

Part II

**Paper I — APPLIED BASIC SCIENCE RELATED TO
ANAESTHESIA INCLUDING PHYSICS AND
HISTORY OF ANAESTHESIA**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

I. Essay : (2 × 15 = 30)

**(1) Describe the Anatomy and Physiology of
Neuromuscular junction and Neuromuscular
transmission.**

**(2) Discuss the pulmonary function tests and its
relevance in anaesthetic practice.**

II. Write short notes on : (10 × 5 = 50)

- (a) Ventilation Perfusion mismatch.**
- (b) End tidal CO₂ monitoring.**
- (c) Ayres T piece.**

- (d) Ethylene Oxide sterilization.**
 - (e) World Anaesthesia day.**
 - (f) Autonomic Hyperreflexia.**
 - (g) Induced Hypothermia.**
 - (h) Occulo Cardiac reflex.**
 - (i) Soda lime.**
 - (j) PROSEAL.**
-

[KM 157]

Sub. Code : 2057

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch X — Anaesthesiology

Part II

**Paper I — APPLIED BASIC SCIENCE RELATED TO
ANAESTHESIA INCLUDING PHYSICS AND
HISTORY OF ANAESTHESIA**

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

I. Essay : (2 × 15 = 30)

(1) Describe the principles and methods of sterilization of equipment. What is the importance of sterilization.

(2) Describe the anatomy of the kidney and discuss counter-current mechanisms.

II. Short notes : (10 × 5 = 50)

(a) Pulse Oximetry

(b) Sir Ivan Magill

(c) Diaphragm

(d) Control of respiration

(e) Mapleson's classification of breathing systems

(f) ASA physical status classification and relevance to clinical practice

(g) Oscillometry

(h) Alveolar gas equation and clinical relevance

(i) Diagrammatically represent the events in cardiac cycle

(j) oxygen toxicity.

[KO 155]

Sub. Code : 2057

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Part II

Branch X — Anaesthesiology

Paper I — APPLIED BASIC SCIENCE RELATED TO
ANAESTHESIA INCLUDING PHYSICS AND
HISTORY OF ANAESTHESIA

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay questions : (2 × 15 = 30)

(1) Describe the metabolism of inhalational anaesthetics and their significance.

(2) Discuss the recent modes of ventilation and their application in clinical practice.

II. Short notes :

(10 × 5 = 50)

- (a) Avagadro's hypothesis.
- (b) Rubber gas co-efficient
- (c) Mac Intosh
- (d) Phase two metabolism
- (e) Ros ipsa liquitor
- (f) Sterilisation of anaesthetic equipment
- (g) Functional residual capacity
- (h) Train of four
- (i) Blood salvage.
- (j) Oxygen manufacturing.

[KO 157]

Sub. Code : 2053

M.D. DEGREE EXAMINATION.

Branch X — Anaesthesiology

**APPLIED BASIC SCIENCE RELATED TO
ANAESTHESIA INCLUDING PHYSICS AND
HISTORY OF ANAESTHESIA**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

I. Essay questions : (2 × 15 = 30)

(1) With diagram describe blood supply to brain. Discuss the factors affecting cerebral blood flow. Add a note on effects of anaesthetic agents on cerebral blood flow.

(2) How do you assess the depth of Anaesthesia?

II. Short notes : (10 × 5 = 50)

(a) Beer Lambert Law.

(b) Single Phase Carbondioxide absorption system.

(c) Desflurane Tec Mark 6 Vapouriser.

(d) Effect of intravenous anaesthetic agents on E.E.G.

(e) Shivering during Regional anaesthesia.

(f) Differences between Atracurium and Cisatracurium.

(g) Preservatives added to Local Anaesthetic solutions.

(h) Interactions between carbondioxide absorbants and modern halogenated ethers.

(i) Anaesthetic implications of profound hypothermia and total circulatory arrest.

(j) Advantages and limitations of high dosage opioid anaesthesia.

[KP 155]

Sub. Code : 2057

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch X — Anaesthesiology

Part II

Paper I — APPLIED BASIC SCIENCE RELATED TO ANAESTHESIA INCLUDING PHYSICS AND HISTORY OF ANAESTHESIA

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes	Theory : 80 marks
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M.C.Q. : Twenty minutes **M.C.Q. : 20 marks**

Answer ALL questions.

I. Essay :

(1) With the help of diagram, describe the anatomy of internal jugular vein, what are the techniques of cannulation of internal jugular vein, and describe the uses as well as hazards to this cannulation.

(20)

(2) Discuss the anatomy and physiology of Neuromuscular junction, how neuromuscular transmission is influenced by drugs/physiological changes and detail monitoring of neuromuscular blockade. (15)

(3) Classify intravenous anaesthetic agents. Discuss in detail about pharmacodynamics and pharmacokinetics of 'PROPOFOL' and its use in T.I.U.A. (15)

II. Write short notes on : (6 × 5 = 30)

(a) **Dynamic compliance.**

(b) ANOVA.

(c) Mr. Crawford Long.

(d) Minimum monitoring standards in anaesthesia.

(e) **Hyper carbia.**

(f) Soda lime.

[KP 157]

Sub. Code : 2053

M.D. DEGREE EXAMINATION.

Branch X — Anaesthesiology

Paper I — APPLIED BASIC SCIENCES RELATED TO
ANAESTHESIA INCLUDING PHYSICS IN
ANAESTHESIA, HISTORY OF ANAESTHESIA

Time : Three hours Maximum : 100 marks

Theory : Two hours and Theory : 80 marks
forty minutes

M.C.Q : Twenty minutes M.C.Q : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay Question :

1. What are liver function tests, How are these functions important to anaesthesiologists. (20)
2. What do you mean by pH, How is it maintained in human body? (15)
3. Describe ventilation/perfusion ration in detail including factors affecting it. (15)

II. Short notes : (6 × 5 = 30)

- (a) Cerebral circulation
 - (b) Minimum alveolar concentration
 - (c) Fick's principle
 - (d) Mg^{+} ion
 - (e) Sterilization of equipment
 - (f) Train of four.
-

[KQ 142]

Sub. Code : 2053

M.D. DEGREE EXAMINATION.

Branch X — Anaesthesiology

**APPLIED BASIC SCIENCE RELATED TO
ANAESTHESIA INCLUDING PHYSICS IN
ANAESTHESIA AND HISTORY OF ANAESTHESIA**

Common to :

Part II – Paper I – (Old/New/Revised Regulations)

(Candidates admitted from 1988-89 onwards)

and

**Paper I – (For candidates admitted from 2004-2005
onwards)**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay :

(1) Classify the sympathetic nervous system receptors. Enumerate their site of distribution and functions. Give one test to check functioning of the sympathetic and para sympathetic nervous system. (20)

(2) Describe the physical principles underlying the measurement of carbondioxide concentration in the expired gas using infrared spectroscopy and Raman Spectroscopy. (15)

(3) Define Minimum Alveolar Concentration (MAC) of inhaled anaesthetic agents. Enumerate the physiological and pharmacological factors affecting MAC. (15)

II. Short notes :

(6 × 5 = 30)

- (a) Hagen poiseuille's law.
- (b) Soda lime.
- (c) Sir Ivan Magill's.
- (d) Scavenging system.
- (e) Proliferation of extra junctional receptors and anaesthetic impicators.
- (f) Dexmedetomidine.

[KR 142]

Sub. Code : 2053

M.D. DEGREE EXAMINATION.

Branch X—Anaesthesiology

APPLIED BASIC SCIENCE RELATED TO
ANAESTHESIA INCLUDING PHYSICS IN
ANAESTHESIA AND HISTORY OF ANAESTHESIA

Common to :

Part II — Paper I — (Old/New/Revised Regulations)

(Candidates admitted upto 2003-04)

and

Paper I – (For candidates admitted from 2004–2005 onwards)

Time : Three hours **Maximum : 100 marks**

Theory : Two hours and forty minutes	Theory : 80 marks
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M.C.Q. : Twenty minutes **M.C.Q. : 20 marks**

Answer ALL questions.

I. Long Essay :

(1) What are the pathophysiologic changes that accompany major thermal injury? What resuscitative measures would you institute in a patient with 50% burns with evidence of inhalation burns? (20)

(2) Classify hypovolemic shock. List the signs and symptoms of each. Discuss the resuscitation of a 30 year old male who sustains a road traffic accident. His vitals are BP - 80/60 mmHg, HR - 140/min, RR - 30/min, hematocrit - 24%. He is brought to the OT for an exploratory laparotomy. (15)

(3) Discuss the differential diagnosis of intraoperative hyperthermia and outline the management of any one of the causes. (15)

II. Short notes : (6 × 5 = 30)

(a) Aorto-caval syndrome

(b) Volume of distribution

(c) Extra junctional receptors

(d) ECG changes in hyperkalemia and its treatment

(e) Define the following and enumerate the formulae used for their calculation :

- shunt fraction

- physiologic dead space

(f) Anion gap and its significance.

MARCH 2008

[KS 145]

Sub. Code : 2040

M.D. DEGREE EXAMINATION.

Branch X — Anaesthesiology

APPLIED BASIC SCIENCE RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA AND HISTORY OF
ANAESTHESIA

Common to

Part II — Paper I — (Old/New/Revised Regulations)

(Candidates admitted upto 2003-04)

and

Paper I — (For candidates admitted from 2004-2005 onwards)

Q.P. Code : 202040

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay Questions : (2 × 20 = 40)

1. Describe with a neat diagram the formation of brachial plexus. What are the various approaches for a brachial plexus block? What are the complications associated with interscalene approach? (20)
2. What is homeostasis? Describe in detail the acid-base regulation in our body. (20)

II. Short Notes : (10 × 6 = 60)

1. Functional Residual Capacity (FRC)
 2. Circle of Willis
 3. Calcium channel blockers
 4. John snow
 5. Venturi Principle
 6. Transducers
 7. Hyponatraemia
 8. Anti cholinergic drugs
 9. Anaerobic metabolism
 10. Nerve supply of female genito-urinary tract
-

March 2009

[KU 145]

Sub. Code: 2040

M.D. DEGREE EXAMINATION

**Branch X – ANAESTHESIOLOGY
(Common to all candidates)**

**APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA,
HISTORY OF ANAESTHESIA**

Q.P. Code : 202040

Time : Three hours

Maximum : 100 marks

Draw suitable diagram wherever necessary

Answer ALL questions

I. Essay questions : (2 x 20 = 40)

1. Describe how you would differentiate different types of neuromuscular blockade. Discuss the factors which modify neuromuscular blocking action of muscle relaxants.
2. Enumerate kidney function tests and their importance in anaesthesia.

II. Write short notes on : (10 x 6 = 60)

1. Hering – Bruer reflex.
2. Hyperkalemia.
3. Sir Robert Macintosh.
4. Functional residual capacity.
5. Low flow anaesthesia.
6. Heat and moisture exchanger.
7. Poiseuille's Law.
8. Trans oesophageal echocardiography.
9. Milrinone.
10. Circle of Willis.

September 2009

[KV 145]

Sub. Code: 2040

M.D. DEGREE EXAMINATION

**Branch X – ANAESTHESIOLOGY
(Common to all candidates)**

**APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA,
HISTORY OF ANAESTHESIA**

Q.P. Code : 202040

Time : Three hours

Maximum : 100 marks

Draw suitable diagram wherever necessary

Answer ALL questions

I. Essay questions : (2 x 20 = 40)

1. Describe the anatomy and physiology of neuro muscular function.
Discuss the methods of monitoring neuro muscular block.
2. Describe the principles of external defibrillators and its clinical uses.
How is it different from automated external defibrillator.

II. Write short notes on : (10 x 6 = 60)

1. I and II Hyderabad chloroform commission.
2. James Young Simpson.
3. PIN Index System.
4. Uses and problems of anaesthetic data management system.
5. Capnography
6. Double lumen ET tubes.
7. Anaesthesia gas concentration monitors
8. Rigid laryngoscope blades
9. Functional analysis of Bain's circuit.
10. Gas plasma sterilization.

March 2010

[KW 145]

Sub. Code: 2040

M.D. DEGREE EXAMINATION

Branch X – ANAESTHESIOLOGY

**Paper – I (for candidates admitted from 2004-05 to 2007-08) and
Part I – (for candidates admitted from 2008-2009 onwards)**

**APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA,
HISTORY OF ANAESTHESIA**

Q.P. Code : 202040

Time : Three hours

Maximum : 100 marks

Draw suitable diagram wherever necessary

Answer ALL questions

I. Essay questions : (2 x 20 = 40)

1. Describe the anatomy of sympathetic nervous system and enumerate the functions.
2. Discuss the epidemiology and pathophysiology of anaphylaxis in anaesthesia practice. Describe the methods of identification, prevention and treatment.

II. Write short notes on : (10 x 6 = 60)

1. Hypermagnesemia.
2. Virgencia apgar.
3. Desflurane.
4. Placental barrier.
5. Hypoxic pulmonary vasoconstriction.
6. TEC 6 vaporizer.
7. Henry's law.
8. Peripheral nerve stimulator.
9. Isoproterenol.
10. Cerebral steal syndrome.

September 2010

[KX 145]

Sub. Code: 2040

M.D. DEGREE EXAMINATION

Branch X – ANAESTHESIOLOGY

**APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA INCLUDING
PHYSICS IN ANAESTHESIA, HISTORY OF ANAESTHESIA**

**Paper – I (for candidates admitted from 2004-05 to 2007-08) and
Part I - (for candidates admitted from 2008-2009 onwards)**

Q.P. Code : 202040

Time : Three hours

Maximum : 100 marks

Draw suitable diagram wherever necessary.

Answer ALL questions.

I. Essay questions :

(2 X 20 = 40)

1. Describe the Anatomy of the Brachial plexus; briefly describe the various types of brachial plexus blocks and describe in detail about any one block.
2. Describe in detail the various intravenous induction agents used in Anaesthesia.

II. Write short notes on :

(10 X 6 = 60)

1. Cerebral circulation.
2. Coagulation Pathway.
3. Venturi Principle.
4. Hyderabad chloroform commission.
5. John Snow.
6. Hoffmann Elimination.
7. Oxygen Cascade.
8. Occulo Cardiac Reflex.
9. GABA receptor.
10. Reynolds number.

MAY 2011

[KY 145]

Sub. Code: 2040

M.D. DEGREE EXAMINATION

BRANCH X – ANAESTHESIOLOGY

**APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA INCLUDING
PHYSICS IN ANAESTHESIA, HISTORY OF ANAESTHESIA**

Q.P. Code : 202040

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

Pages (Max.)	Time (Max.)	Marks (Max.)
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1. Describe the Anatomy of Caudal epidural space and discuss Caudal anaesthesia in pediatrics.
2. Describe in detail the various muscle relaxants used in anaesthesia and enumerate the causes of inadequate reversal of neuromuscular blocking agents.

11	35	15
11	35	15

II. Write notes on :

1. Oxygen dissociation curve.
2. Supraglottic airway devices.
3. Stellate ganglion block.
4. Phase 2 block.
5. Hagen-Poiseuille equation.
6. 2, 3 DPG.
7. Osmolality.
8. Hoffmann elimination.
9. Venturi principle.
10. Mallampatti classification.

4	10	7
4	10	7
4	10	7
4	10	7
4	10	7
4	10	7
4	10	7
4	10	7
4	10	7
4	10	7

October 2011

[KZ 145]

Sub. Code: 2040

M.D. DEGREE EXAMINATION

BRANCH X – ANAESTHESIOLOGY

**APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA INCLUDING
PHYSICS IN ANAESTHESIA, HISTORY OF ANAESTHESIA**

Q.P. Code : 202040

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

**Pages Time Marks
(Max.) (Max.) (Max.)**

- | | | | |
|--|----|----|----|
| 1. Describe the lateral wall of nose. Explain its importance in clinical anaesthesiology. | 11 | 35 | 15 |
| 2. On what Physical principles Flow meter work.
How they are guarded against delivering hypoxic mixture.
How will you detect malfunction including in high altitude? | 11 | 35 | 15 |

II. Write notes on :

- | | | | |
|--|---|----|---|
| 1. Cox 2 inhibitors. | 4 | 10 | 7 |
| 2. Low molecular weight heparins. | 4 | 10 | 7 |
| 3. Statins. | 4 | 10 | 7 |
| 4. Etomidate. | 4 | 10 | 7 |
| 5. Bioavailability. | 4 | 10 | 7 |
| 6. Liquid Oxygen. | 4 | 10 | 7 |
| 7. Boyles laws and its application in Anaesthesiology. | 4 | 10 | 7 |
| 8. Crawford long. | 4 | 10 | 7 |
| 9. Surface tension. | 4 | 10 | 7 |
| 10. Doppler effect. | 4 | 10 | 7 |

April 2012

[LA 145]

Sub. Code: 2040

M.D. DEGREE EXAMINATION

BRANCH X – ANAESTHESIOLOGY

**APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA INCLUDING
PHYSICS IN ANAESTHESIA, HISTORY OF ANAESTHESIA**

Q.P. Code : 202040

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

**Pages Time Marks
(Max.) (Max.) (Max.)**

- | | | | |
|---|----|----|----|
| 1. Describe the arterial circulation of the heart with the aid of a diagram mentioning the unique features of coronary blood flow. Explain the Goldman's cardiac risk index and its importance to the anesthesiologist. | 16 | 35 | 15 |
| 2. Briefly describe Hepatic blood flow. How is it affected by anesthetics and adjuvants. | 16 | 35 | 15 |

II. Write notes on :

- | | | | |
|--|---|----|---|
| 1. Sir John Snow. | 4 | 10 | 7 |
| 2. Carbon di oxide absorption systems in the anesthesia and their uses. | 4 | 10 | 7 |
| 3. What are the new generation pulse oximeters and their Uses. | 4 | 10 | 7 |
| 4. Explain High Dose Opioid Anesthesia. | 4 | 10 | 7 |
| 5. What is context sensitive half time? What is its clinical significance? | 4 | 10 | 7 |
| 6. Nerve blocks for Faciomaxillary Surgery. | 4 | 10 | 7 |
| 7. Types of Anesthesia ventilators. | 4 | 10 | 7 |
| 8. Reynald's Number and its application in clinical Anesthesia. | 4 | 10 | 7 |
| 9. Causes and Management of atrial fibrillation. | 4 | 10 | 7 |
| 10. Thiopentone sodium | 4 | 10 | 7 |

[LB 145]

OCTOBER 2012

Sub. Code: 2040

**M.D. DEGREE EXAMINATION
BRANCH X – ANAESTHESIOLOGY
APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY OF ANAESTHESIA
Q.P. Code : 202040**

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. Describe portal circulation. Discuss patho-physiology of cirrhosis of liver.	16	35	15
2. Write a note on anatomy of coronary arteries. Discuss the pharmacological management of Ischemic Heart Disease.	16	35	15

II. Write notes on :

1. Enumerate Antihypertensives and discuss the peri operative use of antihypertensives ?	4	10	7
2. What are the methods of Airway assessment?	4	10	7
3. Describe Low flow technique.	4	10	7
4. What is Temperature compensation in vaporizers?	4	10	7
5. Discuss the uses of Hydroxy ethyl starch.	4	10	7
6. What is D-Tubocurarine? Why is it not being used in present day practice ?	4	10	7
7. Patho physiology of Halothane Hepatitis.	4	10	7
8. What is Hypoxic pulmonary vasoconstriction and its role in anesthesia?	4	10	7
9. Discuss the uses of Mannitol.	4	10	7
10. How do you measure Peak Expiratory Flow Rate ? What is its importance?	4	10	7

(LC 145)

APRIL 2013

Sub. Code: 2040

M.D. DEGREE EXAMINATION

BRANCH X –ANAESTHESIOLOGY

**APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA INCLUDING
PHYSICS IN ANAESTHESIA, HISTORY OF ANAESTHESIA**

Q.P.Code: 202040

Time: Three Hours

Maximum: 100 marks

I. Elaborate on:

(2X15=30)

1. Describe the physiological changes associated with different postures during anaesthesia.
2. Describe the anatomy and electrophysiology of cardiac pacemakers and the conduction systems. Give an account of the anti-arrythmic drugs.

II. Write notes on:

(10X7=70)

1. Definition, measurement and significance of closing capacity.
2. Safety mechanisms to prevent the delivery of hypoxic mixture in anaesthesia machines.
3. Classification of anaesthesia breathing systems
4. Mechanisms and effects of the Pressurising and pumping effect.
5. Definition, advantages, problems and management of Low flow anaesthesia.
6. Effects of the Valsalva maneuver and its uses in anaesthesia practice
7. Contributions of Sir Ivan whiteside Magill to anaesthesia practice.
8. The mechanism and types of channel block and drugs producing this.
9. The stimulus, effect and mechanism in Cushing`s reflex.
10. Enumerate the Supra-glottic airways with advantages and disadvantages of each.

[LD 145]

OCTOBER 2013

Sub. Code: 2040

M.D. DEGREE EXAMINATION

BRANCH X – ANAESTHESIOLOGY

APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA

INCLUDING PHYSICS IN ANAESTHESIA, HISTORY OF ANAESTHESIA

Q.P.Code: 202040

Time: Three Hours

Maximum: 100 marks

I. Elaborate on:

(2 x 15 = 30)

1. Describe the anatomy of larynx with differences in adults and children. Explain with diagram the various nerve palsies of larynx.
2. Name the adrenergic agonists and antagonists. Describe in detail their uses in anaesthetic practice.

II. Write notes on:

(10 x 7 = 70)

1. Discuss the factors influencing vaporizer output.
2. SIR IVAN MAGILL and his contribution to anaesthesia.
3. Alveolar gas equation and its importance in anaesthesia.
4. I-GEL Airway – Description and benefits.
5. Discuss the physical principles of pulse oximetry.
6. Functional Residual Capacity – Definition and factors affecting FRC.
7. Describe the Anaesthesia Machine check protocol.
8. Differential Nerve Block – Description and uses.
9. Ergometrine Vs Oxytocin – Pharmacology, uses dose and side effects.
10. Context Sensitive half time – Definition, its relation to elimination half time and time to recovery.

**M.D. DEGREE EXAMINATION
BRANCH X –ANAESTHESIOLOGY
APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA INCLUDING
PHYSICS IN ANAESTHESIA, HISTORY OF ANAESTHESIA
Q.P. Code :202040**

Time : Three Hours

Maximum : 100 marks

I. Elaborate on: **(2X15=30)**

1. What are the indications of one lung ventilation. Discuss the pathophysiology of hypoxemia during one lung ventilation. Discuss the treatment of hypoxemia during one lung ventilation.
2. How do you do airway examination of an adult. Explain the American Society of Anaesthesiologist's difficult airway algorithm.

II. Write notes on: **(10X7=70)**

1. Draw and explain left ventricular pressure – volume loop.
2. Oxyhemoglobin dissociation curve.
3. Minimum alveolar concentration.
4. Describe the neuro muscular monitoring characteristics of non depolarising neuromuscular blocking drugs .
5. Discuss use of Fenoldopam and Dopamine in high risk renal dysfunction patients.
6. Hagen-Poiseuille equation and its anaesthetic implications.
7. W.T.G.Morton.
8. Anaesthetic implications of Angiotensin converting enzyme inhibitors drugs.
9. Describe the anatomy of coronary arterial blood supply.
10. Describe a single breath gas wash out curve of capnography.

[LG 145]

APRIL 2015

Sub. Code: 2040

M.D. DEGREE EXAMINATION

BRANCH X – ANAESTHESIOLOGY

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA,
HISTORY OF ANAESTHESIA**

Q.P.Code: 202040

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 15 = 30)

1. Describe the temperature regulation in human body. Enumerate the physiological and metabolic changes that occur during moderate hypothermia.
2. Discuss in detail the effect of barometric pressure on performance of vaporizers and discuss the unique features of Desflurane vaporizer.

II. Write notes on:

(10 x 7 = 70)

1. Intravenous regional anaesthesia.
2. Minimal alveolar concentration.
3. Circle of Willis.
4. Co-axial anaesthetic breathing system.
5. Aorto-caval compression.
6. Entonox.
7. Glycopyrrolate.
8. Laryngeal mask airway.
9. Laplace law.
10. CSF circulation.

**M.D. DEGREE EXAMINATION
BRANCH X – ANAESTHESIOLOGY**

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY OF ANAESTHESIA**

Q.P. Code: 202040

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 15 = 30)

1. What is Cerebral autoregulation? Discuss implications of various inhalational anaesthetic agents on cerebral autoregulation.
2. What are major causes of hypoxemia during anaesthesia? What is HPV?
How can GA worsen V/Q mismatch?

II. Write notes on:

(10 x 7 = 70)

1. James Young Simpson.
2. Fluid management in Paediatric anaesthesia.
3. Use of Intralipids in Anaesthesia.
4. Countercurrent mechanism in the Kidney.
5. Inotropes used in Anaesthesia.
6. Mapleson's breathing circuits.
7. Humidification in Anaesthesia.
8. Routes of administration of Morphine.
9. Use of Erythropoietin.
10. Ropivacaine.

[LI 145]

APRIL 2016

Sub. Code: 2040

**M.D. DEGREE EXAMINATION
BRANCH X – ANAESTHESIOLOGY**

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code :202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Describe coronary circulation and write notes on cardiac output monitoring?
2. What is central venous pressure, what are the different approaches of CVP cannulation, describe merits and demerits of each approach?

II. Write notes on:

(10 x 7 = 70)

1. Heat moisture exchanger.
2. Boyles law and its application in anaesthesia.
3. Colloids.
4. Ralf Waters.
5. Soda lime.
6. Venturi principle.
7. Denitrogenation.
8. Propofol.
9. Oxygen cascade.
10. PEEP.

[LJ 145]

OCTOBER 2016

Sub. Code: 2040

**M.D. DEGREE EXAMINATION
BRANCH X – ANAESTHESIOLOGY**

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code :202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Describe the Anatomy and distribution of cardiac conduction system with a note on electrophysiological changes.
Discuss the antiarrhythmic drugs.
2. Enumerate the causes and discuss the management of metabolic acidosis with its anaesthetic relevance.

II. Write notes on:

(10 x 7 = 70)

1. Failed intubation drill.
2. EMO vaporizer.
3. Optimal PEEP.
4. Synthetic oxygen carriers.
5. Vasopressin – Role in CPR.
6. Jugular venous oxygen saturation.
7. Ankle block.
8. Reperfusion injury.
9. Rocuronium.
10. Oculo cardiac reflex.

[LK 145]

MAY 2017

Sub. Code: 2040

**M.D. DEGREE EXAMINATION
BRANCH X – ANAESTHESIOLOGY**

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code :202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Describe briefly the working principle of pulseoximetry and capnography and describe their role in anaesthesia.
2. Classify adrenergic receptors and write on clinically used drugs acting on adrenergic receptors.

II. Write notes on:

(10 x 7 = 70)

1. Vital capacity.
2. Pin index system.
3. August Bier.
4. Diffusion hypoxia.
5. Cisatracurium.
6. Liquid oxygen.
7. Rotameter.
8. Hydroxyl ethyl starch.
9. Mixed venous oxygen tension.
10. Poynting effect.

**M.D. DEGREE EXAMINATION
BRANCH X – ANAESTHESIOLOGY**

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code :202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. How do you classify adrenergic receptors?
Discuss in detail pharmacology of beta blockers.
2. Discuss the circulation of cerebro spinal fluid.
What are the measures to decrease intracranial pressure intraoperatively?
Add a note on the effects of anaesthetic agents on cerebral physiology.

II. Write notes on:

(10 x 7 = 70)

1. Lees cardiac risk index.
2. Thromboelastography.
3. Coanda effect.
4. Flumazenil.
5. Virginia apgar.
6. Bronchial tone.
7. Wave form in a normal capnographic tracing.
8. Autonomic hyperreflexia.
9. Oxy haemoglobin dissociation curve.
10. Holter monitor.

[LM 145]

MAY 2018

Sub. Code: 2040

**M.D. DEGREE EXAMINATION
BRANCH X – ANAESTHESIOLOGY**

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code :202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Classification of vaporizers. Describe in detail about Tec-6 vaporizer.
2. Describe in detail about the anatomy of larynx. Describe various types of vocal cord palsy.

II. Write notes on:

(10 x 7 = 70)

1. Thiopentone.
2. Minimum Alveolar Concentration.
3. Intracranial Pressure.
4. James Young Simpson.
5. Train of Four stimulation.
6. Oxygen Cascade.
7. Functional Residual Capacity.
8. Surfactant.
9. AortoCaval Compression.
10. Continuous Positive Airway Pressure.

[LN 145]

OCTOBER 2018

Sub. Code: 2040

**M.D. DEGREE EXAMINATION
BRANCH X – ANAESTHESIOLOGY**

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code: 202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Definition, classification and description of breathing systems and circuits. (including functional analysis).
2. Describe in detail about the Broncho pulmonary segments and their significance. Elaborate on Oxygen transport in blood.

II. Write notes on:

(10 x 7 = 70)

1. Propofol.
2. Cardiac Cycle.
3. Cerebral Autoregulation.
4. W.T.G. Morton.
5. Blood gas solubility.
6. Chemoreceptors.
7. Non respiratory functions of Lungs.
8. Synchronised Intermittent Mandatory Ventilation.
9. Liver Function Tests.
10. Anti hypoxic flowmeters.

[LO 145]

MAY 2019

Sub. Code: 2040

**M.D. DEGREE EXAMINATION
BRANCH X – ANAESTHESIOLOGY**

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code: 202040

Time : Three Hours

Maximum : 100 Marks

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

1. Describe the anatomy and distribution of cardiac conduction system.
Discuss the Antiarrhythmic drugs.
2. Describe the system wise - anaesthetic implications of morbid obese patient
and how will you preoperatively evaluate this patient posted for laparotomy?

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

1. Colloids used peri-operatively.
2. Ankle Block.
3. John Snow.
4. Venturi principle.
5. Functional Residual Capacity.
6. Supraglottic Airway Devices.
7. Soda lime.
8. Cisatracurium.
9. Mallampatti Classification.
10. Phase 2 Block.

[LP 145]

OCTOBER 2019

Sub. Code: 2040

**M.D. DEGREE EXAMINATION
BRANCH X – ANAESTHESIOLOGY**

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code: 202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. What is Central Venous Pressure? Describe the different approaches of CVP Cannulation, Indications and contraindications.
2. Physiology of Neuro Muscular Junction and discuss the various Neuromuscular Blocking Agents.

II. Write notes on:

(10 x 7 = 70)

1. Ralf waters.
2. Denitrogenation.
3. Ropivacaine.
4. ACE Inhibitors.
5. Describe the factors that determine cardiac output.
6. Pulse Oximeter.
7. Assessment of Difficult Airway.
8. Boyle's law and its application in Anesthesia.
9. Complications of Blood Transfusion.
10. Peripheral Nerve Stimulator.

[LQ 145]

AUGUST 2020
(MAY 2020 SESSION)

Sub. Code: 2040

M.D. DEGREE EXAMINATION

BRANCH X – ANAESTHESIOLOGY

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code: 202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Describe the anatomy and physiology of coronary circulation. Mention the factors affecting myocardial oxygen supply demand balance.
2. Describe in details the various intravenous induction agents used in anaesthesia practice.

II. Write notes on:

(10 x 7 = 70)

1. Pin Index system.
2. Pre oxygenation.
3. TEC 6 vaporizer.
4. Oxygen toxicity.
5. Static electricity.
6. Inhaled anaesthetics-uptake and distribution.
7. Levosimendan.
8. Sri Robert Macintosh.
9. Airway resistance.
10. Jackson Rees circuit.

[LS 145]

NOVEMBER 2020
(OCTOBER 2020 SESSION)

Sub. Code: 2040

M.D. DEGREE EXAMINATION

BRANCH X – ANAESTHESIOLOGY

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code: 202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Describe the anatomy of larynx and its innervations. What are the differences between neonatal and adult larynx? Enumerate with diagrams the types of vocal cord palsies.
2. Enumerate various positions in relation to anaesthesia and discuss in details the problems associated with positions?

II. Write notes on:

(10 x 7 = 70)

1. Safety features in Anaesthesia Machine.
2. Hypoxic pulmonary vasoconstriction.
3. Mr WTG Morton.
4. Mapleson classification of breathing system.
5. Oxygen cascade.
6. ANTS (Anaesthesia Non Technical Skills).
7. Swan Ganz catheter.
8. Bazold Jarisch reflex.
9. Labetolol.
10. Plasma gas sterilization.

[MD 0721]

JULY 2021
(MAY 2021 SESSION)

Sub. Code: 2040

M.D. DEGREE EXAMINATION

BRANCH X – ANAESTHESIOLOGY

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code: 202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Discuss the circulation of cerebrospinal fluid. Give an outline of cerebral blood flow and its autoregulation. What are the measures to decrease the intracranial pressure? How do anaesthetic agents influence cerebral physiology?
2. Describe the anatomy of Larynx. Mention the differences in the laryngeal anatomy of adults and children. Describe the various nerve palsies of larynx with illustrative diagrams and their management.

II. Write notes on:

(10 x 7 = 70)

1. Alveolar gas equation and its importance in anaesthesia.
2. Liposomal Local anaesthetics.
3. Closing capacity.
4. Oxygen dissociation curve.
5. Reperfusion injury.
6. Oculocardiac reflex.
7. W.T.G. Morton.
8. Aortocaval compression.
9. Avogadro's hypothesis.
10. Pin Index safety system.

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

[MD 1121]

**NOVEMBER 2021
(OCTOBER 2021 SESSION)**

Sub. Code: 2040

M.D. DEGREE EXAMINATION

BRANCH X – ANAESTHESIOLOGY

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code: 202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Describe adrenergic receptors. Discuss the various adrenergic agonists and antogonists. Explain their uses in anaesthetic practice.
2. Discuss Acid Base Regulation in our Body.

II. Write notes on:

(10 x 7 = 70)

1. Hyperkalemia.
2. Hypoxic Pulmonary vasoconstriction.
3. Mannitol.
4. Peak Expiratory Flow Rate.
5. Etomidate.
6. Carbon dioxide absorption systems in Anaesthesia.
7. Laplace law.
8. Sir Robert Macintosh.
9. Circle of Willis.
10. Trans oesophageal echocardiography.

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

[MD 0522]

MAY 2022

Sub. Code: 2040

M.D. DEGREE EXAMINATION

BRANCH X – ANAESTHESIOLOGY

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA, HISTORY
OF ANAESTHESIA**

Q.P. Code: 202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Define Cardiac output. Describe factors affecting cardiac output. Describe one technique for measuring cardiac output.
2. Describe in details the various inhalational agents used in anaesthesia practice.

II. Write notes on:

(10 x 7 = 70)

1. Yoke block.
2. TEC 7 vaporizer.
3. Doppler effect.
4. Ideal intravenous induction agents.
5. Bain circuit.
6. Diffusion Hypoxia.
7. John Snow.
8. Caudal epidural space.
9. Functional Residual capacity.
10. Bainbridge reflex during regional Anaesthesia.

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

[MD 1022]

OCTOBER 2022

Sub. Code: 2040

M.D. DEGREE EXAMINATION

BRANCH X – ANAESTHESIOLOGY

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA,
HISTORY OF ANAESTHESIA**

Q.P. Code: 202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Define Fick effect, Diffusion hypoxia. What is Hypoxic pulmonary vasoconstriction? How General Anaesthesia worsens V/Q mismatch?
2. Describe neuromuscular transmission and factors modifying neuromuscular blocking action of muscle relaxation. Discuss the advantages of newer muscular relaxants in Anaesthesia.

II. Write notes on:

(10 x 7 = 70)

1. Static Electricity.
2. Closing volume.
3. Enzyme induction – Describe mechanism and its Role in anaesthesia.
4. Co- axial anaesthetic breathing system.
5. Anaphylaxis.
6. BIS monitoring.
7. Ocular tonometry.
8. Sir Ivan Whiteside Magill.
9. Enumerate the various Gas laws.
10. Soda lime.

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

[MD 0723]

**JULY 2023
(MAY 2023 EXAM SESSION)**

Sub. Code: 2040

**M.D. DEGREE EXAMINATION
BRANCH X – ANAESTHESIOLOGY**

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA,
HISTORY OF ANAESTHESIA**

Q.P. Code: 202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. What is Central Venous Pressure? Describe the different approaches of CVP Cannulation, Indications, Contraindications and Complications related to it.
2. What is Humidification? Describe in detail various methods of Humidification along with the advantages and disadvantages.

II. Write notes on:

(10 x 7 = 70)

1. WTG Morton.
2. Nor adrenaline.
3. Compliance and Resistance of Lungs and Chest wall.
4. Remifentanyl.
5. Video Laryngoscope.
6. Oxygen Cascade.
7. Pin Index.
8. Boyle's Law.
9. Role of Ultrasound in assessing difficult airway.
10. Surfactant.

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

[MD 1223]

**DECEMBER 2023
(OCTOBER 2023 EXAM SESSION)**

Sub. Code: 2040

**M.D. DEGREE EXAMINATION
BRANCH X – ANAESTHESIOLOGY**

**PAPER I – APPLIED BASIC SCIENCES RELATED TO ANAESTHESIA
INCLUDING PHYSICS IN ANAESTHESIA,
HISTORY OF ANAESTHESIA**

Q.P. Code: 202040

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Different approaches of Acid Base Balance.
2. Functional Anatomy of the Anaesthesia Work Station, highlighting the safety features in each section.

II. Write notes on:

(10 x 7 = 70)

1. Mucociliary function and surfactant.
2. Beer Lambert Law.
3. Raman effect and its application in Anaesthesia.
4. Tubuloglomerular Feedback.
5. Zero versus First – Order Kinetics.
6. Weight Scalars.
7. Heme Metabolism and Bilirubin.
8. Cardiac Reflexes.
9. Evolution of Anaesthesia in India.
10. Harvey Cushing.
