

BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY), PUNE
DOCTOR OF MEDICINE
M. D. ANAESTHESIA : SUMMER : 2023
SUBJECT : PAPER-I



Day : Monday

Time : 01:30 PM-04:30 PM

Date : 17-07-2023

S-722-2023

Max. Marks : 100

N.B.

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the **RIGHT** indicate **FULL** marks.
 - 3) Draw neat diagrams **WHEREVER** necessary.
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- Q.1** Describe the Oxygen Dissociation Curve (ODC). What are the factors that cause a shift of the ODC in relation to p50. (10)
- Q.2** Describe the ISA fasting and feeding Guidelines in anaesthesia practice. (10)
- Q.3** August K.G. Bier (10)
- Q.4** Discuss centrally acting non-opioid analgesics. (10)
- Q.5** What is cerebral autoregulation? Discuss the implications of various inhalational anesthetic agents on cerebral autoregulation. (10)
- Q.6** Define Functional Residual Capacity (FRC) and Closing Capacity (CC). Discuss their clinical significance. (10)
- Q.7** How will you preoperatively assess a patient posted for hemithyroidectomy? (10)
- Q.8** Classify Breathing Circuits. Describe the test used for checking integrity of Bain's circuit. (10)
- Q.9** Explain Revised Cardiac Risk Index. (10)
- Q.10** Compare Sevoflurane versus Desflurane. (10)

BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY), PUNE
DOCTOR OF MEDICINE
M. D. ANAESTHESIA : SUMMER : 2023
SUBJECT : PAPER-II



Day : Wednesday

Time : 01:30 PM to 04:30 PM

Date : 19-07-2023

S-723-2023

Max. Marks : 100

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate **FULL** marks.
- 3) Draw neat diagrams **WHEREVER** necessary.

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- Q.1 Describe the techniques for anaesthetizing the airway for awake nasal fiberoptic laryngoscopy and intubation in an adult with restricted mouth opening. (10)
- Q.2 What are the complications associated with awareness during General anaesthesia? Describe the methods of measuring the depth of anaesthesia. (10)
- Q.3 Describe the pathophysiology, optimisation and anaesthetic management of Congenital Diaphragmatic Hernia in a neonate. (10)
- Q.4 Describe Pathophysiology of nausea and vomiting. Discuss the Pharmacological strategies to prevent perioperative nausea and vomiting. (10)
- Q.5 Describe implication of anaesthesia for surgery in sitting position. (10)
- Q.6 Describe perioperative evaluation of patient posted for thoracic kyphoscoliosis surgery. (10)
- Q.7 Discuss intrathecal opioids. (10)
- Q.8 What are the anaesthetic considerations for day care surgeries? Discuss the clinical criteria for discharge after day care surgery. (10)
- Q.9 Discuss anaesthetic management of Myasthenia Gravis patient posted for interval appendectomy including management of possible complications. (10)
- Q.10 30 years old female, ASA-I, following exploratory laparotomy, not maintaining Oxygen saturation in Post Anaesthesia Care Unit (PACU). Discuss causes and management. (10)

BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY), PUNE- 30
DOCTOR OF MEDICINE
M. D. ANAESTHESIA : SUMMER : 2023
SUBJECT : PAPER-III



Day : Friday

Time : 01:30 PM - 04:30 PM

Date : 21-07-2023

S-724-2023

Max. Marks : 100

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate **FULL** marks.
- 3) Draw neat diagrams **WHEREVER** necessary.

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- Q.1** Discuss the pathophysiology, classification and airway management of a patient with Post Burn Contracture (PBC) neck. (10)
- Q.2** Discuss intraoperative anaesthesia management in brief in a patient undergoing pheochromocytoma excision, including that of possible complications. (10)
- Q.3** Briefly describe thermoregulation in a neonate. How to prevent hypothermia in a neonate posted for major abdominal surgery? (10)
- Q.4** Discuss Beta blockers and anaesthetic considerations. (10)
- Q.5** Describe the mechanism by which Intra Arterial Balloon Pump (IABP) augments coronary perfusion. What are the indications and contraindications for the use of IABP? (10)
- Q.6** Explain perioperative fluid therapy in paediatric patient. (10)
- Q.7** Discuss in brief anaesthetic concerns in 85 year old patient posted for Lumbar spine surgery with fixation. (10)
- Q.8** Discuss perioperative complications in a patient with severe pre-eclampsia posted for caesarian section. (10)
- Q.9** Define Body Mass Index (BMI). Classify obesity and discuss the anaesthetic considerations in morbidly obese patient scheduled for gastric banding. (10)
- Q.10** Discuss pre-operative preparation of patient posted for pneumonectomy. (10)

BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY), PUNE- 30
DOCTOR OF MEDICINE
M. D. ANAESTHESIA : SUMMER : 2023
SUBJECT : PAPER-IV



Day : Monday

Time : 01:30 PM-04:30 PM

Date : 24-07-2023

S-725-2023

Max. Marks : 100

N.B.

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the **RIGHT** indicate **FULL** marks.
 - 3) Draw neat diagrams **WHEREVER** necessary.
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- Q.1** Discuss indications, pros and cons of prone ventilation in ICU. (10)
- Q.2** Compare Train of Four (TOF) versus Double Burst (DBS) in neuromuscular monitoring (10)
- Q.3** Describe role of patient simulation in anaesthesia and Critical Care setting. (10)
Mention few clinical scenarios where it can be helpful.
- Q.4** What is Total Intravenous Anaesthesia (TIVA)? Describe the suggested models for Target Controlled Infusion (TCI). (10)
- Q.5** Discuss the diagnosis, types and management of Complex Regional Pain Syndrome (CRPS) of left upper limb in a 25 year young patient. (10)
- Q.6** Draw a well labelled diagram of a normal Thromboelastograph (TEG). Describe the clinical implication of TEG in anaesthesiology practice. (10)
- Q.7** Define Anion gap and discuss its significance in interpretation of ABG. (10)
- Q.8** What do you understand by randomized sample? What are the various types of random samples? (10)
- Q.9** Discuss principles for Enhanced Recovery After Caesarian section. (ERAC) (10)
- Q.10** Describe the problems in monitoring an anaesthetized child in MRI suite. (10)



M. D. (Anaesthesia) : SUMMER – 2021
SUBJECT : PAPER – I : BASIC SCIENCES AND PRINCIPLES AS APPLIED TO
ANAESTHESIOLOGY

Day : Thursday
Date : 01/07/2021

Time : 1:30 P.M. TO 4:30 P.M.
Max. Marks : 100

S-2021-722

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Neat diagrams must be drawn **WHEREVER** necessary.
- 4) Your answer will be valued as a whole.

Long Questions:

(15 Marks each)

- Q. 1 Discuss uptake, distribution and elimination of volatile anaesthetic agents.
- Q. 2 Discuss distribution of Ventilation (V) & Perfusion (Q) in a normal lung. What are the factors affecting V/Q ratio?

Semi – Long Questions (Answer Any Seven)

(10 Marks each)

- Q. 3 Discuss plasma proteins and anaesthesia.
- Q. 4 Describe 'Mapleson-E' breathing system.
- Q. 5 Discuss Nephrotoxicity of fluorinated anaesthetics.
- Q. 6 Write note on Hepatitis B and anaesthesiologist.
- Q. 7 William Thomas Green Morton.
- Q. 8 Role of Scavenging system in OT pollution.
- Q. 9 Advantages and disadvantages of Video Laryngoscope
- Q.10 Cis – Atracurium

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M. D. (Anaesthesia) : SUMMER – 2021
SUBJECT : PAPER – II : ANAESTHESIOLOGY INCLUDING TECHNIQUES & REGIONAL ANAESTHESIA

Day : Saturday
Date : 03/07/2021

Time : 1:30 P.M. TO 4:30 P.M.
Max. Marks : 100

S-2021- 723

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Neat diagrams must be drawn **WHEREVER** necessary.
- 4) Your answer will be valued as a whole.

Long Questions:

(15 Marks each)

- Q. 1** Define post-operative cognitive dysfunction. How will you diagnose it?
Discuss regional versus general anaesthesia in concern to it.
- Q. 2** Discuss anaesthetic management of known case of Myasthenia Gravis. posted for interval appendicectomy. Discuss management of likely complications.

Semi – Long Questions (Answer Any Seven)

(10 Marks each)

- Q. 3** Discuss indications and complications of reverse Trendelenburg position.
- Q. 4** Describe indication, contraindications and technique of Fascia iliaca compartment block.
- Q. 5** Describe newer spinal needles.
- Q. 6** Discuss anaesthetic problems of surgery in prone position.
- Q. 7** Discuss management strategy for extubation in a patient with difficult Airway.
- Q. 8** Discuss principle and uses of Ultrasonography (USG) in day to day anaesthesia practice.
- Q. 9** Discuss airway management of patient of Ankylosing Spondylitis with severe restriction of neck movements, posted for Total Hip Replacement.
- Q.10** Describe indication and complications of lithotomy position.

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M. D. (Anaesthesia) : SUMMER – 2021
SUBJECT : PAPER – III : MEDICINE & SURGERY AS APPLIED TO
ANAESTHESIOLOGY INCLUDING SUPERSPECIALTY SURGERIES

Day : Monday
Date : 05/07/2021

Time : 1:30 P.M. TO 4:30 P.M.
Max. Marks : 100

S-2021- 724

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Neat diagrams must be drawn **WHEREVER** necessary.
- 4) Your answer will be valued as a whole.

Long Questions:

(15 Marks each)

- Q. 1** Discuss evaluation, anaesthesia management and post-operative care of a 14 years old girl with thoraco-lumbar scoliosis, scheduled for posterior primary fusion of 10 vertebral segments.
- Q. 2** A 50 yrs male with recent history of IHD diagnosed as triple-vessel disease on angiography posted for on pump coronary artery bypass. Discuss preoperative evaluation, anaesthesia management and postoperative care.

Semi – Long Questions (Answer Any Seven)

(10 Marks each)

- Q. 3** Management of anaesthesia of bleeding esophageal varices.
- Q. 4** Differential lung ventilation in lung surgery-discuss anaesthesia management.
- Q. 5** A 35 yrs female patient with history of small thyroid swelling posted for fibro adenoma of left breast. Discuss concerns for anaesthesia management.
- Q. 6** Perioperative maintenance of intra-ocular pressure during eye surgery.
- Q. 7** Enumerate the peculiarities of paediatric airway and anaesthetic implications.
- Q. 8** What are anaesthetic concerns in a 40 year patient posted for LASER micro laryngeal surgery? Describe steps for management of airway fire.
- Q. 9** Discuss Renal Protection strategies in perioperative period.
- Q.10** Discuss merits and demerits of irrigation fluids used for Trans Urethral Resection of Prostate (TURP).



M. D. (Anaesthesia) : SUMMER – 2021
SUBJECT : PAPER – IV: ANAESTHESIOLOGY INCLUDING CRITICAL CARE, PAIN
MEDICINE & RECENT ADVANCES

Day : Wednesday
Date : 07/07/2021

Time : 1:30 P.M. TO 4:30 P.M.
Max. Marks : 100

S-2021- 725

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Neat diagrams must be drawn **WHEREVER** necessary.
- 4) Your answer will be valued as a whole.

Long Questions:

(15 Marks each)

- Q. 1** Discuss the anaesthetic management of a patient posted for Robot assisted laparoscopic cholecystectomy.
- Q. 2** Define Body Mass Index (BMI). Classify obesity. Enumerate respiratory, cardiovascular and metabolic changes occurring in morbid obesity.

Semi – Long Questions (Answer Any Seven)

(10 Marks each)

- Q. 3** What is a 'sample' -when conducting a research? What is the importance of sample size?
- Q. 4** What is Anion gap? Discuss briefly causes and management of Metabolic Acidosis.
- Q. 5** Discuss problems encountered during perioperative management of the patient with chronic pain.
- Q. 6** Hypokalaemia: Management and anaesthetic implications.
- Q. 7** Complication, merits and demerits of total parenteral nutrition.
- Q. 8** Ventricular fibrillation / pulse-less VT algorithm.
- Q. 9** Diagnostic tests for Brain Death.
- Q.10** Compare and contrast: Dopamine Versus Dobutamine.

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BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY), PUNE- INDIA
DOCTOR OF MEDICINE
M. D. ANAESTHESIA :SUMMER- 2022
SUBJECT : PAPER-I

Day : Friday
Date : 1/7/2022

S-722-2022

Time : 01:30 PM-04:30 PM
Max. Marks : 100

N.B.:

- 1) Draw Diagrams **WHEREVER** necessary.

Long Questions

(15 Marks Each)

- Q.1** Define preload and afterload. Discuss the factors which influence preload and afterload under anaesthesia.
- Q.2** Describe the anatomy of larynx and its innervations. Briefly discuss nerve blocks necessary for awake fiberoptic intubation.

Semi-Long Questions (Answer ANY SEVEN)

(10 Marks Each)

- Q.3** What do you mean by term 'Recruitment maneuver'? Discuss its implications in anaesthesia management.
- Q.4** Write short note on 'Balanced Anaesthesia'.
- Q.5** Discuss how anesthesiologists can contribute for reducing 'Green house effect'.
- Q.6** Enumerate the factors regulating Cerebral Blood Flow and the effect of various anaesthetic drugs on CBF.
- Q.7** Discuss the role of plasma protein binding in anaesthesia practice. Enumerate the drugs bound to different plasma proteins.
- Q.8** Draw a diagram to illustrate the fetal circulation. Discuss the circulatory changes occurring at birth.
- Q.9** Discuss signs, symptoms and management of latex allergy.
- Q.10** Uptake, distribution and excretion of Nitrous oxide during anaesthesia.

BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY, PUNE-INDIA)
DOCTOR OF MEDICINE
M. D. ANAESTHESIA : SUMMER- 2022
SUBJECT : PAPER-II

Day : Monday
Date : 4/7/2022

S-723-2022

Time : 01:30 PM-04:30 PM
Max. Marks : 100

N.B.:

- 1) Draw Diagrams **WHEREVER** necessary.

Long Questions

(15 Marks Each)

- Q.1** Describe general principles and conduct of general anaesthesia at a high altitude.
- Q.2** Discuss the goals and techniques of Monitored anaesthesia care. Enumerate the discharge criteria for a patient after day care surgery.

Semi-Long Questions (Answer ANY SEVEN)

(10 Marks Each)

- Q.3** Describe effect of reverse trendelenburg position under anaesthesia.
- Q.4** Discuss anaesthetic considerations in multiple sclerosis.
- Q.5** Discuss anaesthetic considerations in interventional pulmonary procedures.
- Q.6** Describe various perioperative pain management strategies in a 70 year-old patient with fracture neck of femur.
- Q.7** Describe the anatomy of stellate ganglion. Discuss indications, techniques and implications of stellate ganglion block.
- Q.8** Discuss methods of detection of epidural space and common complications of epidural block.
- Q.9** Discuss the oculo-cardiac reflex and its management.
- Q.10** Point of care measures of coagulation.

M.D. (ANAESTHESIA): SUMMER-2022
SUBJECT: PAPER-III
MEDICINE AND SURGERY AS APPLIED TO ANAESTHESIOLOGY INCLUDING
SUPERSPECIALTY SURGERIES

Day: Wednesday
Date: 06-07-2022

Time: 1:30 P.M. TO 4:30 P.M.
Max. Marks: 100

S-724-2022

N.B.:

- 1) Draw Diagrams WHEREVER necessary.

Long Questions

(15 Marks Each)

- Q.1 Enumerate the functions of liver. Describe the anaesthetic management of patient with obstructive jaundice scheduled for Whipple's procedure.
- Q.2 Describe the methods of prevention of rise in intracranial tension? Discuss principles of anaesthesia management of posterior Fossa surgery.

Semi-Long Questions (Answer ANY SEVEN)

(10 Marks Each)

- Q.3 What are the limitations and hazards of anaesthetic management in MRI suite? Describe the anaesthetic management of a 6-month old child with hydrocephalus scheduled for MRI.
- Q.4 Discuss recent consensus criteria to define Acute Kidney injury. What are mechanisms for perioperative Acute Kidney injury.
- Q.5 Describe the role of Trans Esophageal Echocardiography (TEE) in a patient with coronary artery disease scheduled for surgery under general anaesthesia.
- Q.6 Describe the steps involved in thyroid hormone synthesis. Discuss preanaesthetic evaluation, optimization and anaesthetic management of a patient with thyrotoxicosis with Atrial fibrillation.
- Q.7 Discuss the anaesthetic concerns in a term pregnant woman with severe eclampsia posted for Caesarean section.
- Q.8 Tumescence anaesthesia technique and its complications.
- Q.9 A 8 days neonate comes with distension of abdomen posted for laparotomy discuss anaesthesia management.
- Q.10 Discuss anaesthesia management in 45 years patient for excision of Vocal cord nodule.

M.D. (ANAESTHESIA): SUMMER-2022
SUBJECT: PAPER-IV
ANAESTHESIOLOGY INCLUDING CRITICAL CARE, PAIN MEDICINE AND
RECENT ADVANCES

Day : Friday
Date : 8/7/2022

S-765-2022

Time : 01:30 PM-04:30 PM
Max. Marks : 100

N.B.:

- 1) Draw Diagrams **WHEREVER** necessary.

Long Questions

(15 Marks Each)

- Q.1** Describe different regional anaesthesia techniques used for postoperative pain management in knee arthro plasty.
- Q.2** Describe types of shocks and discuss use of inotropes and vasopressor in a particular type of shock.

Semi-Long Questions (Answer ANY SEVEN)

(10 Marks Each)

- Q.3** Discuss anaesthesia concerns in thalassemia.
- Q.4** Write recent Algorithm for advanced Cardiac Life Support.
- Q.5** What are the different methods of 'Non invasive ventilation' and enumerate factors predicting NIV failure?
- Q.6** What are the Criteria used for clinical diagnosis of brain death?
- Q.7** Describe signs and symptoms of hyponatremia and how will you manage it?
- Q.8** Write a note on uses of USG (ultrasound) imaging in ICU practice.
- Q.9** Describe acute and chronic effects of postoperative pain.
- Q.10** Discuss role of Factor Xa inhibitors in anticoagulation, reversal of their effects and anaesthesia challenges.



Day & Date: Wednesday 01/07/2020

Time: 1:30 P.M. TO 4.30 P.M.

S-722-2020

Max. Marks: 100

N.B.:

- 1) Draw Diagrams **WHEREVER** necessary.

Long Questions

(15 Marks each)

- Q.1 Enumerate various gas laws and their anaesthetic implications.
- Q.2 Discuss functional anatomy of liver. Discuss effects of anaesthetic drugs on liver functions.

Semi- Long Questions (Answer ANY SEVEN)

(10 Marks each)

- Q.3 Discuss preanaesthetic assessment of End stage Renal disease patient posted for A.V. fistula formation.
- Q.4 Write a note on the 'frank starling curve'.
- Q.5 Write a note on 'Double Lumen tube'.
- Q.6 Describe the transport of CO₂ in blood, explain Bohr effect and Haldane effect.
- Q.7 Differentiate between elimination and clearance of intravenous agents.
- Q.8 Discuss cleaning and maintenance of medical gas pipeline.
- Q.9 Discuss contributions of DR. Ronald D. Miller to anaesthesia.
- Q.10 Describe 'Endotracheally delivered medications'.

M.D. (ANAESTHESIA): SUMMER- 2020
SUBJECT: PAPER-II
(ANAESTHESIOLOGY INCLUDING TECHNIQUES
AND REGIONAL ANAESTHESIA)



Day & Date: Friday 03/07/2020
Time: 1:30. P.M. TO 4.30 P.M.

S-723-2020
Max. Marks: 100

N.B.:

- 1) Draw Diagrams **WHEREVER** necessary.

Long Questions

(15 Marks each)

- Q.1** Describe physiology of 'lateral decubitus' position. Discuss methods adopted to improve oxygenation in one lung ventilation.
- Q.2** What are the properties of ideal anaesthetic agent for 'day care surgery'? Discuss merits and demerits of drugs used in anaesthesia practice for 'day care surgery'.

Semi- Long Questions (Answer ANY SEVEN)

(10 Marks each)

- Q.3** How will you proceed if you land in can't ventilate can't intubate situation?
- Q.4** Describe in brief the techniques of continuous spinal analgesia and its role on current practice.
- Q.5** Describe the indications of transoesophageal echocardiography.
- Q.6** Write a note on 'quadratus lumborum-block'.
- Q.7** Discuss blood sparing strategies in cancer surgery.
- Q.8** Discuss the role of an anaesthesiologist in trauma care.
- Q.9** Discuss the clinical applications 'Bispectral index'.
- Q.10** Discuss current guidelines for prophylaxis at postoperative nausea and vomiting.

M.D. (ANAESTHESIA): SUMMER- 2020
SUBJECT: PAPER-III
(MEDICINE AND SURGERY AS APPLIED TO ANAESTHESIOLOGY
INCLUDING SUPERSPECIALTY SURGERIES)



Day & Date: Monday 06/07/2020
Time: 1:30. P.M. TO 4.30 P.M.

S-724-2020
Max. Marks: 100

N.B.:

- 1) Draw Diagrams **WHEREVER** necessary.

Long Questions

(15 Marks each)

- Q.1** How will you manage a 70 yrs old male with history of angioplasty 10 months before and now posted for total hip replacement surgery?
- Q.2** Discuss perioperative management of 3yr old child for decortication of left lung lobe.

Semi- Long Questions (Answer ANY SEVEN)

(10 Marks each)

- Q.3** Discuss 'fat embolism'.
- Q.4** 32 year old lady, with gestational diabetes mellitus, weighing 90 kg is posted for elective LSCS. Discuss anesthetic management.
- Q.5** Discuss methods of minimizing 'shunt' under anaesthesia.
- Q.6** Discuss advantages and complications of submental intubation.
- Q.7** Identify anaesthetic problems encountered in a case with renal insufficiency posted for elective URSL.
- Q.8** How will you manage patient posted for excisional biopsy for intra oral lesion.
- Q.9** Discuss anaesthesia concerns in hypothyroidism.
- Q.10** Describe perioperative management of perforated eye injury.

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M.D. (ANAESTHESIA): SUMMER- 2020
SUBJECT: PAPER-IV
(ANAESTHESIOLOGY INCLUDING CRITICAL CARE, PAIN MEDICINE
AND RECENT ADVANCES)



Day & Date: Wednesday 08/07/2020
Time: 1:30. P.M. TO 4.30 P.M.

S-725-2020
Max. Marks: 100

N.B.:

- 1) Draw Diagrams **WHEREVER** necessary.

Long Questions

(15 Marks each)

- Q.1** Discuss lung ultrasound and its upcoming role in anaesthesia and critical care.
- Q.2** Discuss causes of perioperative acid base disturbances. How will you treat it

Semi- Long Questions (Answer ANY SEVEN)

(10 Marks each)

- Q.3** Discuss the role of pain physician in palliative care.
- Q.4** Discuss in short about 'jugular bulb oximetry'.
- Q.5** Discuss point of care measures of coagulation.
- Q.6** Discuss magnesium and anesthesiologist.
- Q.7** Discuss 'balanced colloids'.
- Q.8** Write short note on 'meta-analysis'.
- Q.9** Discuss anaesthetic considerations in paediatric laproscopic surgeries.
- Q.10** Write a note on oxygen therapy in covid positive adult patient.

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