

**B.Sc. CRITICAL CARE TECHNOLOGY**  
(New Syllabus 2014-2015)

**SECOND YEAR**

**PAPER IV – PATHOLOGY, PATHOPHYSIOLOGY AND  
PHARMACOLOGY**

*Q.P. Code: 801219*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Elaborate on the classification, preparations, clinical uses and adverse effects of Benzodiazepines.
2. Elaborate on the pharmacology of ANY FOUR atropine substitutes.
3. Describe the classification, preparations, clinical uses and adverse effects of ANY FOUR vasopressor drugs used in emergencies.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Routes of drug administration.
2. ANY FIVE clinical uses of corticosteroids.
3. Beta blockers in the treatment of hypertension.
4. Second generation antihistamines.
5. Clinical uses, contra-indications and adverse effects of penicillins.
6. Treatment of status asthmaticus.
7. Role of nitrous oxide in anaesthesia and critical care practice.
8. Clinical uses and adverse effects of aspirin.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Dissociative anaesthesia.
2. Reversal of neuromuscular blocker over dosage.
3. Dobutamine.
4. Sodium nitroprusside.
5. Verapamil.
6. Tramadol.
7. Clonidine.
8. Codeine.
9. Naloxone.
10. Expectorants.

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**PAPER IV – PATHOLOGY, PATHOPHYSIOLOGY AND  
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*Q.P. Code: 801219*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Elaborate on the classification, advantages, disadvantages, and adverse effects of general anesthetics.
2. Elaborate on the pharmacology of ANY FOUR sympathomimetic drugs.
3. Describe the classification, preparations, clinical uses and adverse effects of bronchodilators.

**II. Write notes on:**

**(8 x 5 = 40)**

1. First pass metabolism.
2. Clinical uses and adverse effects of succinylcholine.
3. ANY FIVE uses and contra-indications of corticosteroids.
4. Vasodilators.
5. Clinical uses, and adverse effects of Aspirin.
6. Drugs used in the treatment of shock.
7. Role of antimicrobial drugs in anaesthesia and critical care practice.
8. Clinical uses and adverse effects of opioids.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Lorazepam.
2. Treatment of atropine over dosage.
3. Anti-histamines.
4. Neostigmine.
5. Propranolol.
6. Telmisartan.
7. Flumazenil.
8. Clinical uses of opioid antagonists.
9. Buprenorphine.
10. Antiseptics and disinfectants.

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**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Elaborate on the classification, preparations, clinical uses and adverse effects of Corticosteroids.
2. Elaborate on the pharmacology of ANY FOUR skeletal muscle relaxants.
3. Describe the classification, preparations, clinical uses and adverse effects of ANY FOUR inotropic drugs used in emergencies.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Advantages and disadvantages of Intra-Venous (IV) route.
2. ANY FIVE drugs in hypertensive emergencies.
3. Clinical uses and adverse effects of beta blockers.
4. Cetirizine.
5. Clinical uses and adverse effects of gentamicin.
6. Clinical uses of nitrates.
7. Role of glycopyrrolate in anaesthesia and critical care practice.
8. Role of beta stimulants as bronchodilators.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Midazolam.
2. Reversal of opioid over dosage.
3. Different actions and uses of dopamine based on dosing rates.
4. Thiopentone sodium.
5. ANY THREE pharmacological actions of diazepam.
6. Mucolytic agents.
7. Transdermal therapeutic systems.
8. Clinical uses of adrenaline.
9. Adverse effects of Non-Steroidal Anti-Inflammatory Agents (NSAIDs).
10. Role of oxygen as a therapeutic gas in critical care practice.

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**B.Sc. CRITICAL CARE TECHNOLOGY**  
(New Syllabus 2014-2015 & 2015-2016)

**SECOND YEAR**

**PAPER IV – PATHOLOGY, PATHOPHYSIOLOGY AND  
PHARMACOLOGY**

*Q.P. Code: 801219*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Classify Beta blockers. Write the pharmacological actions, therapeutic uses and adverse effects of Beta blockers.
2. Classify opioid analgesics. Write the pharmacological actions and adverse effects of Morphine. Outline the treatment of acute morphine poisoning.
3. Classify sympathomimetic drugs. Write the mechanism of action and pharmacological actions of adrenaline. Therapeutic uses and adverse effects of adrenaline.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Radio-active iodine.
2. Indications and contra indications of glucocorticoids.
3. Intravenous general Anaesthetics
4. Heparin – mechanism of action, adverse effects and indications.
5. Treatment of organophosphorus poisoning.
6. Thiazide diuretics – Mechanism of action, adverse effects and uses.
7. Treatment of Myocardial infarction.
8. Complications of General anaesthesia.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Drugs used in anaphylactic shock.
2. Drugs used in status epilepticus.
3. Mention any four preanaesthetic medications.
4. Enumerate four routes of drug administration.
5. Therapeutic uses of oxygen.
6. Name the bronchodilators. What is their role in Bronchial asthma?
7. Drugs for Gastroesophageal reflux disease.
8. Therapeutic use of atropine.
9. First pass metabolism with suitable example.
10. Mydriatics substitutes.

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PHARMACOLOGY**

*Q.P. Code: 801219*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Classify the drugs used in peptic ulcer. Mention the mechanisms of action of the various groups of drugs. Write down the anti helicobacter pylori regimens.
2. Classify  $\beta$  blockers. Discuss the pharmacological actions, kinetics, adverse effects and Uses of propranolol.
3. Classify the drugs used for Diabetes Mellitus. Discuss the actions and the available preparations of insulin.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Therapeutic uses of Adrenocorticosteroids.
2. Management of organo phosphorus compound poisoning.
3. Radio active Iodine (Iodine<sup>131</sup>).
4. Pre-anaesthetic medication.
5. Selective beta 2 agonists in the treatment of bronchial asthma.
6. Actions and uses of ondansetron.
7. Drug therapy of cardiogenic shock.
8. Mechanism of action of Digoxin in congestive cardiac failure

**III. Short answers on:**

**(10 x 3 = 30)**

1. Mention four anti amoebic drugs.
2. Mention four first line Anti tubercular agents.
3. Mention four topical antifungal drugs.
4. Mention four uses of corticosteroids.
5. Mention four factors affecting the absorption of iron.
6. Therapeutic uses of alpha blockers.
7. Name two selective COX-2 inhibitors.
8. Drugs used in status epilepticus.
9. Rationale of giving adrenaline along with local anaesthetics.
10. Pilocarpine Therapeutic uses.

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**B.Sc. CRITICAL CARE TECHNOLOGY**  
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**PAPER IV – PATHOLOGY, PATHOPHYSIOLOGY AND  
PHARMACOLOGY**

*Q.P. Code: 801219*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:** **(3 x 10 = 30)**

1. Define Cerebro Vascular Accident. Mention the causes, risk factors and Management.
2. Elaborate on the classification, preparations, clinical uses and adverse effects of Corticosteroids.
3. Define Upper Gastrointestinal Tract bleeding. What are the causes of it? Mention its clinical features and Management.

**II. Write notes on:** **(8 x 5 = 40)**

1. Define Respiratory Failure. What are the Types? Causes of Respiratory failure.
2. Indications for Hemodialysis.
3. How will you protect the Airway in Trauma? Explain Airway management and Spinal Immobilization in Trauma?
4. Vasodilators.
5. Define Neutropenia. What are the causes of Neutropenia?
6. Define Head Injury. Explain the types of Head Injury.
7. Define Pulmonary Edema. Explain the Pathophysiology.
8. Pathophysiology of myocardial infarction.

**III. Short answers on:** **(10 x 3 = 30)**

1. Mention three routes of drug administration.
2. Mention three first line Anti tubercular drugs.
3. Reversal of opioid over dosage.
4. THREE causes of Neutropenia in ICU.
5. Clinical uses of Adrenaline.
6. Enumerate about clotting disorders.
7. Mucolytic agents.
8. Classify the severity of ARDS.
9. Radioactive iodine.
10. Define Emphysema. Mention two types of Emphysema.

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**SECOND YEAR**

**PAPER IV – PATHOLOGY, PATHOPHYSIOLOGY AND  
PHARMACOLOGY**

*Q.P. Code: 801219*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:** **(3 x 10 = 30)**

1. Elaborate on the classification, preparations, clinical uses and adverse effects of Benzodiazepines.
2. Mention the types of shock. Write about the Pathogenesis of septic shock. Also write a note on stages of shock.
3. Elaborate on Pathogenesis, clinical course and management of bronchial asthma.

**II. Write notes on:** **(8 x 5 = 40)**

1. Routes of drug administration.
2. Beta blockers in the treatment of hypertension.
3. Clinical uses, contra-indications and adverse effects of penicillins.
4. Role of nitrous oxide in anaesthesia and critical care practice.
5. Define Edema. Explain the Pathophysiology of edema.
6. Paracetamol its uses and adverse effects.
7. Anemia in ICU.
8. Myasthenia gravis.

**III. Short answers on:** **(10 x 3 = 30)**

1. Dissociative anaesthesia.
2. Dobutamine.
3. Verapamil.
4. Clonidine.
5. Expectorants.
6. Mention three coagulation disorders and the clotting factor deficient in them.
7. Define bronchiectasis.
8. Mention three agents causing pneumoconiosis and the disease caused.
9. Factors affecting wound healing.
10. Types of emphysema.

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PHARMACOLOGY**

*Q.P. Code: 801219*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Describe the classification, preparations, clinical uses and adverse effects of any four vasopressor drugs used in emergencies.
2. Elaborate on the classification, advantages, disadvantages and adverse effects of general anesthetics.
3. Mention the causative organism, mode of spread and pathology of tuberculosis.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Any five clinical uses of corticosteroids.
2. Treatment of status asthmaticus.
3. Clinical uses and adverse effects of aspirin.
4. Second generation antihistamines.
5. Define neutropenia. What are the causes of neutropenia?
6. Pathogenesis of myocardial infarction.
7. Haemophilia A.
8. Management of diaphragmatic paralysis.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Reversal of neuromuscular blocker over dosage.
2. Sodium nitroprusside.
3. Tramadol.
4. Codeine.
5. Mention the opportunistic infections in AIDS.
6. Any three pharmacological actions of diazepam.
7. Define emphysema. Mention two types of emphysema.
8. Different modes of spread of tumour.
9. Complications of wound healing.
10. Stages in lobar pneumonia.

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

[AHS 0321]

**MARCH 2021**

**Sub. Code: 1219**

**(AUGUST 2020 EXAM SESSION)**

**B.Sc. CRITICAL CARE TECHNOLOGY**

**SECOND YEAR (From 2014-2015 and 2015-2016 onwards)**

**PAPER IV – PATHOLOGY, PATHOPHYSIOLOGY AND PHARMACOLOGY**

***Q.P. Code : 801219***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Describe the classification, preparation, clinical uses and adverse effects of bronchodilators.
2. Classify the drugs used in peptic ulcer. Mention the mechanisms of action of the various groups of drugs. Write down the anti helicobacter pylori regimen.
3. Define Cerebrovascular Accident. Mention the causes, risk factors and Management.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Clinical uses and adverse effects of succinylcholine.
2. Clinical uses and adverse effects of Aspirin.
3. Clinical uses and adverse effects of opioids.
4. Vasodilators.
5. Guillain barre syndrome.
6. Define Respiratory Failure. What are the Types? Causes of Respiratory failure.
7. Pathophysiology of congestive cardiac failure.
8. Lobar pneumonia.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Neostigmine.
2. Antiseptics and disinfectants.
3. Treatment of atropine overdose.
4. Propranolol.
5. Flumazenil.
6. Enumerate about platelet disorders.
7. Causes of Gastro-intestinal bleeding.
8. Mention the types of COPD.
9. Mention the opportunistic infections in AIDS.
10. Mention three benign and three malignant tumours.

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

[AHS 0222]

**FEBRUARY 2022  
(AUGUST 2021 EXAM SESSION)**

**Sub. Code: 1219**

**B.Sc. CRITICAL CARE TECHNOLOGY  
SECOND YEAR (From 2014-2015 and 2015-2016 onwards)  
PAPER IV – PATHOLOGY, PATHOPHYSIOLOGY AND PHARMACOLOGY  
*Q.P. Code : 801219***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:** **(3 x 10 = 30)**

1. Explain the pathophysiology and management of diabetes mellitus.
2. Elaborate on the pathophysiology and management of myasthenia gravis.
3. Describe the pharmacologic actions and uses of beta blockers and precautions to be kept in mind while using them.

**II. Write notes on:** **(8 x 5 = 40)**

1. Explain the pathophysiology of peptic ulcer.
2. Write a note on mucolytics.
3. What are the limitations of the oral route of drug administration?
4. Explain the mechanism of action and uses of calcium channel blockers.
5. Describe the pharmacological actions of adrenergic drugs.
6. Describe the pathophysiology of pulmonary edema.
7. Describe the actions and uses of ketoconazole.
8. Acyclovir – mechanism of action and uses.

**III. Short answers on:** **(10 x 3 = 30)**

1. List the different types of adverse drug effects.
2. Name three antiseptics.
3. Give three uses of aspirin.
4. Give three uses of neuromuscular blockers.
5. Give any three actions of local anaesthetics.
6. Write three points on alprazolam.
7. List any three types of insulin preparations.
8. List the precautions to be taken with morphine use.
9. Give three uses of broad spectrum antibiotics.
10. Write three points on gentamycin.

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