

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY**  
**(New Syllabus 2014-2015)**  
**SECOND YEAR**  
**PAPER I – PATHOLOGY, MICROBIOLOGY AND PHARMACOLOGY**

*Q.P. Code: 801016*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Write in detail about bacterial cell wall.
2. Define and classify Shock. Add a note on pathophysiology of shock.
3. Classify antihypertensive drugs. Write mechanism of action, drug interaction, adverse effects and therapeutic uses of diuretics.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Bacterial growth curve.
2. Disinfectants used in hospital.
3. Hepatitis B virus.
4. Antiepileptic drugs.
5. Vascular and cellular changes in inflammation.
6. Type III hypersensitivity reaction.
7. Antiretroviral drugs.
8. Humoral mediated immunity.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Robert Koch.
2. Swine flu.
3. Weil's disease.
4. Granulomatous inflammation.
5. Gangrene.
6. Antimicrobial resistance.
7. Insulin.
8. Antihelicobacter pylori drugs.
9. Bioavailability.
10. Treatment of organophosphorous poisoning.

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**SECOND YEAR**  
**PAPER I – PATHOLOGY, MICROBIOLOGY AND PHARMACOLOGY**

*Q.P. Code: 801016*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Classify culture media and add a note on various culture methods.
2. Define and classify hypersensitivity. Add a note on Type 1 hypersensitivity.
3. Classify beta lactam antibiotics. Write mechanism of action, pharmacokinetics, adverse effects and therapeutic uses of penicillin.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Classify various staining techniques and explain about Gram's staining.
2. Viral hemorrhagic fever.
3. Human immunodeficiency virus.
4. Autoimmunity.
5. Enumerate oncogenic virus. Discuss the mechanism of viral oncogenes.
6. Normal microbial flora of human body.
7. Plasma expanders.
8. Antifungal drugs.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Joseph Lister.
2. Cytokines.
3. Laboratory diagnosis of tuberculosis.
4. Universal precautions.
5. Immunoglobulin G (Ig G).
6. Heparin.
7. Bronchodilators.
8. Tumor markers.
9. Endogenous opioid peptides.
10. Human teratogenic agents.

[LL 0817]

AUGUST 2017

Sub. Code: 1016

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY  
SECOND YEAR  
PAPER I – PATHOLOGY, MICROBIOLOGY, PHARMACOLOGY**

*Q.P. Code: 801016*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

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

1. Define neoplasia. Write in detail the biology of tumour growth.
2. Discuss in detail the structure, clinical features and transmission of HIV.
3. Classify antihypertensive drugs. Write the mechanism of action and adverse effects.

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

1. Types of necrosis with example.
2. Chronic inflammation.
3. Type I and II Hypersensitivity reaction.
4. Culture media and its types.
5. Leptospirosis.
6. Medical gases.
7. Antihistamines.
8. Antiviral drugs and their action.

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

1. Atrophy.
2. Acquired immunity.
3. Dengue.
4. Natural Killer cell.
5. Bacteremia.
6. Universal precautions.
7. Transmission of Hepatitis B virus.
8. Uses of mannitol.
9. Pharmacopoeia.
10. Mechanism of action of nitroglycerine.

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**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY**  
**SECOND YEAR**  
**PAPER I – PATHOLOGY, MICROBIOLOGY, PHARMACOLOGY**

*Q.P. Code: 801016*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

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

1. Discuss in detail the mechanism of cell injury.
2. Define sterilization. Explain the chemical methods of sterilization.
3. Classify antibiotics. Write the mechanism of action with examples for each group.

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

1. Chemical mediators of inflammation.
2. Autoimmune disease.
3. Pathogenesis and clinical features of typhoid.
4. Methods of transmission of infection.
5. Hepatitis C.
6. Drugs used in the treatment of bronchial Asthma.
7. Proton pump inhibitors.
8. Anti-diarrhoeal drugs.

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

1. Signs of inflammation.
2. Dermatophytoses.
3. Pneumoconioses.
4. T - Lymphocyte.
5. State any three differences between Gram positive and Gram negative bacteria.
6. Chikungunya.
7. Anti tussive.
8. Beta blockers.
9. Carrier and its types.
10. Name any three anticoagulants.

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PAPER I – PATHOLOGY, MICROBIOLOGY, PHARMACOLOGY**

*Q.P. Code: 801016*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Define shock. Write about the types of shock and elaborate on septic shock.
2. Define sterilization. Write about physical and chemical agents used in sterilization.
3. Classify Anti-hypertensive drugs. Write about the diuretics used in hypertension treatment.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Viral Carcinogenesis.
2. Granuloma.
3. Types of Gangrene.
4. Autoimmunity.
5. Universal Precautions.
6. Human immunodeficiency virus.
7. Broncho dilators.
8. Proton Pump Inhibitors.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Signs of Inflammation.
2. Apoptosis.
3. Bleeding Time.
4. Vitamin D Deficiency.
5. Name any three disinfectants used in hospital.
6. Name any two fungal culture media.
7. Immunoglobulin M.
8. Green Bag in waste disposal.
9. Name any three antiretroviral drugs.
10. Heparin.

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**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Define Necrosis. Write about the different types of necrosis.
2. Write in detail about bacterial cell wall.
3. Write about the classification, doses and pharmacological actions of anti-histamins.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Typhoid Fever.
2. Coronary Heart Disease.
3. Chronic Inflammation.
4. Anti-microbial resistance.
5. Bio-medical waste disposal.
6. Lab diagnosis of Malaria.
7. Non-Steroidal Anti-Inflammatory Drugs.
8. Insulin.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Define Tumour.
2. Hyperplasia.
3. Anaphylactic shock.
4. Clotting time.
5. Nosocomial Infections.
6. Name any three uses of acid fast stain.
7. Robert Koch.
8. Name any three anti-helicobacter pylori drugs.
9. Name any three drugs used in organophosphorous poisoning.
10. Teratogens.

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**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY  
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PAPER I – PATHOLOGY, MICROBIOLOGY, PHARMACOLOGY**

*Q.P. Code: 801016*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Define Tumour. Write the difference between benign and malignant tumour. Add a note on viral carcinogenesis.
2. Define and classify hypersensitivity. Write about Type IV hypersensitivity.
3. Write in detail about neuromuscular blocking agents.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Chemical Mediators of Inflammation.
2. Dengue Fever.
3. Septic Shock.
4. Blood grouping.
5. Hepatitis C.
6. Gram Staining.
7. Treatment of organophosphorous poisoning.
8. Anti-fungal drugs.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Define Gangrene.
2. Name any three causes of Granulomatous inflammation.
3. Types of Angina.
4. Name any three Rickettsial infections.
5. Name any three opportunistic infections in AIDS.
6. Name any three methods of sterilization.
7. Opsonins.
8. Name any three Beta blockers used in treatment of hypertension.
9. Name any three toxic effects of lead.
10. Define bioavailability.

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**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY**  
**SECOND YEAR**  
**PAPER I – PATHOLOGY, MICROBIOLOGY, PHARMACOLOGY**

*Q.P. Code: 801016*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Discuss in detail about the agents causing an infection in ICU, mode of transmission of an infection and its preventive measures.
2. Classify culture media and add a note on various culture methods.
3. Explain antihypertensive drugs. Write the mechanism of action and adverse effects.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Reversible and irreversible cell injury.
2. Antiretroviral drugs.
3. Acid fast staining.
4. Antimicrobial drugs.
5. Humoral mediated immunity.
6. Antiepileptic drugs.
7. Classification of shock and pathophysiology of shock.
8. Viral hemorrhagic fever.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Cytokines.
2. CNS stimulants.
3. Causative organism and clinical features of malaria.
4. Disinfection - Definition and Name of the agents used.
5. Universal precautions.
6. Define autoimmunity.
7. Tumor markers.
8. Types of necrosis.
9. Medical gases.
10. Natural killer cell.

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

[AHS 0321]

**MARCH 2021**

**Sub. Code: 1016**

**(AUGUST 2020 EXAM SESSION)**

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY**

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

**PAPER I – PATHOLOGY, MICROBIOLOGY, PHARMACOLOGY**

***Q.P. Code : 801016***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Discuss in detail about the agents causing an infection in ICU, mode of transmission of an infection and its preventive measures.
2. Discuss in detail the mechanism of cell injury.
3. Write mechanism of action, pharmacokinetics and adverse effects of Sympathetic and Parasympathetic agents.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Antihistamines.
2. Culture media and its types.
3. Chemical mediators of inflammation.
4. Hepatitis C.
5. Methods of transmission of infection.
6. Drugs used in the treatment of bronchial Asthma.
7. Viral Carcinogenesis.
8. Granuloma.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Clinical features of typhoid.
2. Signs of inflammation.
3. T - Lymphocyte.
4. Carrier and its types.
5. Name any three anticoagulants.
6. Apoptosis.
7. Types of immunity.
8. Vitamin D Deficiency.
9. Immunoglobulin M.
10. Beta blockers.

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

[AHS 0222]

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

**Sub. Code: 1016**

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY  
SECOND YEAR (From 2014-2015 onwards)  
PAPER I – PATHOLOGY, MICROBIOLOGY, PHARMACOLOGY  
*Q.P. Code : 801016***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Classify Opioid analgesic and explain about Morphine.
2. Tuberculosis – causative organisms, types, mode of transmission, pathogenesis, diagnostic methods.
3. Classify various methods of sterilization. Write in detail about dry heat sterilization.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Explain the indication, dose, adverse effect of Atropine.
2. Explain the indication, dose, adverse effect of Ketamine.
3. Write about the classification and pharmacological action of Diuretics.
4. Difference between apoptosis and necrosis.
5. Pathogenesis of scrub typhus.
6. Biomedical waste management.
7. Dengue fever.
8. Hepatitis C.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Pharmacological basis of N-acetyl cysteine in paracetamol poisoning.
2. Name any two CNS stimulants with indication.
3. Define Tachyphylaxis.
4. Name any four cardiotonics with their indication.
5. Define Phagocytosis.
6. Define Protein–energy malnutrition with example.
7. Define Systemic inflammatory response syndrome.
8. What is anaerobic media? Give example.
9. Hanging drop technique.
10. Nosocomial Infection.

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

[AHS 0922]

**SEPTEMBER 2022**

**Sub. Code: 1016**

**(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)**

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY  
SECOND YEAR (Regulation from 2014-2015)  
PAPER I – PATHOLOGY, MICROBIOLOGY, PHARMACOLOGY  
Q.P. Code : 801016**

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Define Biomedical waste. What are the categories of biomedical waste? How will you segregate biomedical waste at source? Add a note on the importance of biomedical waste management.
2. Write in detail about the mechanism and pathophysiology of septic shock.
3. Classify antihypertensive drugs. Write mechanism of action, drug interaction, adverse effects of ACE inhibitors.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Hepatitis B.
2. Insulin.
3. Laboratory Diagnosis of Leptospirosis.
4. Drugs Used to Treat Bronchial Asthma.
5. HIV.
6. Universal Precautions.
7. Anti Tuberculosis Drugs.
8. Methicillin Resistant Staphylococcus Aureus (MRSA).

**III. Short answers on:**

**(10 x 3 = 30)**

1. Autoclave.
2. Tumor markers.
3. Types of necrosis.
4. Angina and its types.
5. Louis Pasteur.
6. Antibodies.
7. Beta Blockers.
8. Prevention of Dengue Fever.
9. Morphine.
10. Acid fast staining.

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

[AHS 0423]

APRIL 2023

Sub. Code: 1016

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY**  
**SECOND YEAR (Regulations 2010-2011, 2014-2015 & 2018-2019 onwards)**  
**PAPER I – PATHOLOGY, MICROBIOLOGY, PHARMACOLOGY**  
*Q.P. Code: 801016*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Classify NSAID and explain about Paracetamol.
2. Define Jaundice, and Mention some of the causes and laboratory findings seen in a Jaundiced patient. Write briefly about Hepatitis – B virus induced Liver disease.
3. Classify Hospital Acquired Infections and add a note on Ventilator Associated Pneumonia and its prevention.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Classification and indication for Oral Hypoglycemic drugs.
2. Indication, dose, adverse effect of adrenaline.
3. Drugs used in the treatment of Bronchial Asthma.
4. Difference between dry gangrene and wet gangrene.
5. Type I hypersensitivity reaction.
6. Medical gases O<sub>2</sub> and N<sub>2</sub>O.
7. Acid Fast Staining.
8. Universal precautions.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Name any three uses of Povidone Iodine.
2. Name any two Narcotic Antagonists.
3. Define Pharmacopoeia.
4. Treatment for Organophosphorus poisoning.
5. Etiology of cell injury.
6. Chemical mediators of Inflammation.
7. Weil's disease.
8. Tyndallization.
9. List three opportunistic infections typically associated with HIV infection.
10. Give two examples for blood parasites.

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

[AHS 1123]

NOVEMBER 2023

Sub. Code: 1016

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY**  
**SECOND YEAR (Regulations 2010-2011, 2014-2015 & 2018-2019 onwards)**  
**PAPER I – PATHOLOGY, MICROBIOLOGY, PHARMACOLOGY**  
*Q.P. Code: 801016*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

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

1. Discuss the different Sterilization techniques. Add a note on principle, uses and Sterilisation Control of Autoclave.
2. Discuss in detail pathology of Coronary Artery Disease.
3. Classify Antihypertensive drugs. Write mechanism of action, drug interaction, adverse effects and therapeutic uses of Beta blockers.

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

1. Cell injury and cell death.
2. Universal precautions.
3. Antianginal drugs.
4. Nutritional diseases.
5. Proton pump inhibitors.
6. Antimicrobial resistance.
7. Drugs used in bronchial asthma.
8. Dengue fever and its complications.

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

1. Granulomatous inflammation.
2. Exotoxin and Endotoxin.
3. Calcium channel blockers.
4. Applications of Gram Stain.
5. Tests for disinfectants.
6. Role of Hospital Infection Control Nurse.
7. Potassium sparing diuretics.
8. How is enteric fever caused?
9. Hypersensitivity reactions.
10. Organophosphorus poisoning.

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

**[AHS 0424]**

**APRIL 2024**

**Sub. Code: 1016**

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY**  
**SECOND YEAR (Regulations 2010-2011, 2014-2015 & 2018-2019 onwards)**  
**PAPER I – PATHOLOGY, MICROBIOLOGY, PHARMACOLOGY**  
***Q.P. Code: 801016***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Discuss in detail Morphology, Pathogenicity and Laboratory diagnosis of Mycobacterium tuberculosis.
2. Explain the Microbial pathogenesis of Rheumatic Heart disease.
3. Classify NSAIDS (Non Steroidal Anti Inflammatory Drugs). Write mechanism of action, drug interaction, adverse effects and therapeutic uses of Aspirin.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Cell adaptation and differentiation.
2. Disposal of infectious Wastes in Hospitals.
3. Medical Gases and its safe use.
4. Pathology of Typhoid fever.
5. Opioid analgesics.
6. Clinical features and lab diagnosis of Tetanus.
7. Oral Antidiabetic drugs.
8. General features of Acute Inflammation and its consequences.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Tumor markers.
2. Fungal culture media.
3. Antiemetics.
4. How is Leptospirosis caused?
5. Importance of Widal test.
6. What are CNS stimulants? Give examples.
7. Applications of Sympathetic Blocking agent.
8. Antihelicobacter pylori drugs.
9. Define Bioavailability and its importance.
10. Natural Killer Cells.

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

[AHS 1125]

NOVEMBER 2025

Sub. Code: 1016

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY**  
**SECOND YEAR (Regulations 2010-2011, 2014-2015 & 2018-2019 onwards)**  
**PAPER I – PATHOLOGY, MICROBIOLOGY, PHARMACOLOGY**  
*Q.P. Code: 801016*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

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

1. Discuss in detail about the etiopathogenesis of common Environmental and Nutritional disorders.
2. Define Sterilization and write in detail about methods of Sterilization.
3. Write about the classification, doses and pharmacological actions of antiarrhythmic drugs.

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

1. Oral antidiabetic agents.
2. Normal microbial flora of human body.
3. Methods of transmission of infection.
4. Chemical mediators of inflammation.
5. Drugs used in the treatment of Bronchial Asthma.
6. Proton pump inhibitors.
7. Universal precautions.
8. Etiopathogenesis of Coronary artery disease.

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

1. Bleeding Time.
2. Name any three disinfectants used in hospital.
3. Yellow Bag in waste disposal.
4. Carcinogenic agents.
5. Anaphylactic shock.
6. Neuromuscular blocking agents.
7. Name any three uses of acid fast stain.
8. Diagnostic tests for Tb and Typhoid.
9. Heparin.
10.  $\beta$  - Blockers.

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