

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

[MD 0524]

MAY 2024

Sub. Code: 4009

M.D. DEGREE EXAMINATION

BRANCH IV – MICROBIOLOGY

PAPER I – GENERAL MICROBIOLOGY AND IMMUNOLOGY

Q.P. Code: 204009

Time: Three Hours

Maximum: 100 Marks

I. Essay:

(2 x 15 = 30)

1. Describe in detail about antigen processing and antigen presentation by professional antigen presenting cells. Describe briefly about major Histocompatibility complex.
2. Describe the antimicrobial resistance mechanism among bacteria. Write in detail about the phenotypic detection method of any one antimicrobial resistance mechanism.

II. Short notes:

(10 x 5 = 50)

1. Fluorescent microscope.
2. Central Sterile Supply Department.
3. Quality control for an autoclave functioning.
4. Maintenance of stock culture.
5. HEPA filter.
6. Therapeutic applications of monoclonal antibodies.
7. Tumor antigens.
8. Natural killer cells.
9. T cell receptor.
10. Blotting technique.

III. Reasoning Out:

(4 x 5 = 20)

1. Toxic shock syndrome toxin of Staphylococcus aureus is a super antigen.
2. Procalcitonin is more reliable than C reactive protein.
3. Graft versus host disease is more common in allogeneic stem cell transplantation.
4. Viral infections are one of the environment triggers that can lead to autoimmunity.

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

[MD 1224]

**DECEMBER 2024
(OCTOBER 2024 EXAM SESSION)**

Sub. Code: 4009

M.D. DEGREE EXAMINATION

MICROBIOLOGY

PAPER I – GENERAL MICROBIOLOGY AND IMMUNOLOGY

Q.P. Code: 204009

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. Classify various genetic transfer mechanism. Discuss in detail about Transformation along with its application in drug resistance mechanism. Explain in brief about Mutation and its applications.
2. Define Hypersensitivity and classify Hypersensitivity. Explain in detail about Type 1 and Type 3 hypersensitivity with examples.

II. Short notes: (10 x 5 = 50)

1. Anaerobic culture methods.
2. Operation theatre sterilization.
3. Immunoglobulin class switching.
4. Flagellar stains.
5. Transmission electron microscope.
6. Monoclonal antibody.
7. Explain in brief about the Precipitation reactions.
8. Humoral mediated immunity.
9. Chronic graft rejection in Renal transplant.
10. Define Autoimmunity and its mechanism.

III. Reasoning Out: (4 x 5 = 20)

1. Citrated Plasma is not suitable for Coagulase test.
2. Oxygen is toxic to anaerobic bacteria.
3. Multiple vaccines like DPT are given simultaneously. What is the mechanism behind it?
4. Role of Blocking antibodies in cancer treatment.

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

[MD 0525]

MAY 2025

Sub. Code: 4009

M.D. DEGREE EXAMINATION

MICROBIOLOGY

PAPER I – GENERAL MICROBIOLOGY AND IMMUNOLOGY

Q.P. Code: 204009

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. Define Disinfection. Describe the various classes of disinfectants and their applications in chemical settings.
2. Describe the complement pathway.

II. Short notes: (10 x 5 = 50)

1. Culture media.
2. Phase contrast Microscopy.
3. Bacterial cell wall.
4. Exotoxins.
5. Bacterial spore.
6. Super antigens.
7. Innate immunity.
8. Haem Agglutination Reactions.
9. Immunohematology.
10. T-Regulatory cells.

III. Reasoning Out: (4 x 5 = 20)

1. Non chlorinated bags are used for disposing biomedical waste.
2. Certain bacteria require transport media for viability.
3. Autoimmune diseases are more common in woman.
4. Targeted immunotherapy is better than chemotherapy in treatment of cancer.

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

[MD 1025]

OCTOBER 2025

Sub. Code: 4009

M.D. DEGREE EXAMINATION

MICROBIOLOGY

PAPER I – GENERAL MICROBIOLOGY AND IMMUNOLOGY

Q.P. Code: 204009

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. Classify Autoimmune diseases. Write in detail about Systemic autoimmune diseases.
2. Write in detail about the metabolism and growth requirements of bacteria. Write briefly about continuous culture.

II. Short notes: (10 x 5 = 50)

1. Inverted microscope.
2. Automation in Microbiology.
3. High performance liquid chromatography (HPLC).
4. Transposons.
5. Immunochromatography test (ICT).
6. Immunoglobulin therapy.
7. Sewage treatment plant & Effluent treatment plant (STP & ETP).
8. Tests for phagocytic function.
9. CSISPR.
10. Cross matching and tissue typing before organ transplant.

III. Reasoning Out: (4 x 5 = 20)

1. Phenolic disinfectants are not used in infant nurseries.
2. Truenat test is invalid when controls are not amplified.
3. Conjugation - a form of horizontal gene transfer leads to multidrug resistance.
4. Blood is collected at the same time of the day for CD4 count.
