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

[MD 0524] **MAY 2024** **Sub. Code: 4010**

M.D. DEGREE EXAMINATION

BRANCH IV – MICROBIOLOGY

PAPER II – SYSTEMIC BACTERIOLOGY

Q.P. Code: 204010

Time: Three Hours **Maximum: 100 Marks**

I. Essay: **(2 x 15 = 30)**

1. Classify Rickettsia. Describe the epidemiology, pathogenesis and laboratory diagnosis of Scrub typhus.

2. Classify Streptococci. Describe the virulence factors, pathogenesis and laboratory diagnosis of Streptococci Pyogenes.

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

1. Morrexella catarrhalis.
2. Macrolide resistance in Streptococcus pneumonia.
3. Laboratory diagnosis of plague.
4. Drug resistance in Salmonella.
5. Virulence factors of Bordetella pertussis.
6. Medically important nonfermenters.
7. Recent advances in the laboratory diagnosis of tuberculosis.
8. Laboratory diagnosis of tetanus.
9. Halophilic vibrios.
10. Malignant pustule.

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

1. Visible growth along the inoculation streak line is considered positive for citrate test.
2. Coagulase negative Staphylococcus is frequently isolated from prosthetic infections.
3. Clean catch midstream urine sample is ideal for urine culture.
4. Biofilm formation acts as a virulence factor for bacteria.

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

[MD 1224] DECEMBER 2024 Sub. Code: 4010

(OCTOBER 2024 EXAM SESSION)

M.D. DEGREE EXAMINATION

MICROBIOLOGY

PAPER II – SYSTEMIC BACTERIOLOGY

Q.P. Code: 204010

Time: Three Hours **Maximum: 100 Marks**

I. Essay: **(2 x 15 = 30)**

1. Classify Chlamydiae. Write the developmental cycle of Chlamydiae and detail note about Chlamydia pneumoniae.
2. Enumerate the Bacteria causing Sexually Transmitted diseases. Explain in detail about the morphology, antigenic features, pathogenesis and clinical features of Treponema pallidum. Explain in detail about the laboratory investigations of Treponema pallidum. Add a note on Non-venereal Treponematoses.

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

1. Melioidosis.
2. Non-Tuberculosis Mycobacteria (NTM).
3. Classify the bacteria causing food poisoning.
4. Types of Diarrheagenic Escherichia Coli and its pathogenicity and note on Rapid diagnostic tests.
5. Non typhoidal salmonella and Kauffman – white scheme of classification.
6. Virulence factors of Bordetella pertussis.
7. Lab diagnosis of Anaerobic infections.
8. Mycoplasma.
9. Listeria monocytogenes.
10. Cat Scratch fever.

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

1. Streptococcus pyogenes produces spreading type of lesions.
2. Cell wall deficient bacteria do not grow in routine culture media.
3. Pasteurization process is not adequate to destroy Coxiella burnetii spores.
4. Cystic fibrosis patients are at high risk with Pseudomonas infections.

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

[MD 0525] **MAY 2025** **Sub. Code: 4010**

M.D. DEGREE EXAMINATION

MICROBIOLOGY

PAPER II – SYSTEMIC BACTERIOLOGY

Q.P. Code: 204010

Time: Three Hours **Maximum: 100 Marks**

I. Essay: **(2 x 15 = 30)**

1. A 10-year-old boy came with C/O Multiple impetigo with H/O fever. Enumerate differential diagnosis and find out the correct etiological agents. Explain in detail about the morphology, cultural characteristics, lab diagnosis and special characters of the above Bacteria.

2. Classify Enterobacteriaceae. Explain in detail about dysentery causing bacteria, clinical features, lab diagnosis and classification of shigella.

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

1. Explain in detail about the clinical features of Staphylococcus aureus infections and its virulent factors and toxins.
2. Explain in brief about the morphology, cultural characteristics and special features of Corynebacterium diphtheria.
3. Lyme's disease.
4. Gas Gangrene.
5. Haemophilus ducreyi.
6. Explain in detail about the lab diagnosis of Gonorrhea.
7. Cat scratch fever.
8. Explain in detail about the lab diagnosis of Treponema pallidum.
9. Explain in brief about the morphology and lab investigation of Chlamydia.
10. Brucellosis.

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

1. Klebsiella pneumoniae rusty sputum.
2. Gram negative sepsis is more dangerous.
3. Mycoplasma does not grow in routine culture media.
4. Widal test is not useful in the first week of typhoid fever.

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

[MD 1025] **OCTOBER 2025** **Sub. Code: 4010**

M.D. DEGREE EXAMINATION

MICROBIOLOGY

PAPER II – SYSTEMIC BACTERIOLOGY

Q.P. Code: 204010

Time: Three Hours **Maximum: 100 Marks**

I. Essay: **(2 x 15 = 30)**

1. Enumerate the Bacteria causing Upper Respiratory infection and Lower Respiratory infections. Explain in detail about the morphology, cultural characteristics, clinical features, antigenic features, virulence factors and laboratory diagnosis of Corynebacterium diphtheriae.

2. Enumerate the bacteria causing Meningitis. Explain in detail antigenic structure, pathogenesis and laboratory diagnosis of Neisseria meningitis. Add a note on Prophylaxis.

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

1. Write in detail about the toxins and enzymes of Streptococcus pyogenes.
2. Classify diarrhea causing bacteria. Explain in brief about the morphology, cultural characteristics and lab diagnosis of Vibrio cholerae.
3. Bacillus anthracis.
4. Specimen collection and laboratory diagnosis of Plague.
5. Explain in brief about the morphology and lab diagnosis of Salmonella.
6. Haemophilus influenzae.
7. Legionnaires disease.
8. Helicobacter pylori.
9. Lab diagnosis of Leptospirosis.
10. Write in brief about the morphology, cultural characteristics and lab diagnosis of Brucellosis.

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

1. Why Cowan type 1 Staphylococcus is used for serological investigation?
2. Explain how biofilm production act as a virulent factor for bacteria?
3. The treatment of Bacterial vaginosis depends on Nugent scoring.
4. Eijkman test is more reliable than MPN (Most Probable Number).

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

[MD 0526] **MAY 2026** **Sub. Code: 4010**

M.D. DEGREE EXAMINATION

MICROBIOLOGY

PAPER II – SYSTEMIC BACTERIOLOGY

Q.P. Code: 204010

Time: Three Hours **Maximum: 100 Marks**

I. Essay: **(2 x 15 = 30)**

1. List out the causative agents of infective endocarditis. Write in detail about the diagnostic criteria and laboratory diagnosis of infective endocarditis.

2. List out the causes of chronic bacterial meningitis. Write in detail about the pathogenesis and laboratory diagnosis of Tuberculous meningitis.

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

1. Laboratory diagnosis of Hansen's disease.
2. Group B streptococci.
3. Coryneform bacteria.
4. Gas gangrene.
5. Colicin typing.
6. Antibiotic associated colitis.
7. Laboratory diagnosis of anthrax.
8. Coagulase negative staphylococci.
9. Oroya fever.
10. Bacterial spores as vaccine vehicles.

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

1. Silent treatment failures even with susceptible result in AST.
2. Shigella dysenteriae can cause fatal infections.
3. Colistin susceptibility is tested using MIC.
4. Proteus strains are used to detect rickettsial infections in Weil-Felix test.

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