

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

[MD 0524]

MAY 2024

Sub. Code: 4012

**M.D. DEGREE EXAMINATION
BRANCH IV – MICROBIOLOGY**

PAPER IV – APPLIED MICROBIOLOGY AND RECENT ADVANCES

Q.P. Code: 204012

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. a) Enumerate the commonly encountered health care associated infections (HAI) and their causative agents.
b) Discuss about the care bundle approach for prevention of device – associated infections.
c) Add a note on the HAI surveillance.

2. a) Discuss the methods of determining the antimicrobial resistance (AMR) of bacteria.
b) Write a note on the rapid molecular antimicrobial resistance detection methods.
c) Add a note on the objectives of celebrating World AMR awareness week.

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

1. Newer Vaccine Delivery System.
2. Emerging viral infections in India.
3. Point of care testing in Microbiology.
4. Fungal Rhinosinusitis.
5. Matrix Assisted Laser Desorption / Ionization time of flight mass spectrometry (MALDI –TOF).
6. Biosafety in Microbiology lab.
7. Probiotics.
8. Microbiological surveillance of Operation theatre.
9. Nosocomial parasitic infections.
10. One health approach.

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

1. Capsule of *Cryptococcus neoformans* is a virulence factor.
2. An indwelling catheter is a risk factor for developing urinary tract infection.
3. The development of a candidate HIV vaccine is still a challenge.
4. Levy-Jennings chart is laboratory quality control applications.
