

March-2025

BLDE (DEEMED TO BE UNIVERSITY)

Duration: 1 ½ Hrs.

Max Marks: 50

Pre – Ph.D. Course Work Examination

Paper II: BACKGROUND PAPER (Microbiology)

QP CODE - 6011

- I. Answer ANY TWO of the following** **2 x 10 = 20 Marks**
1. What are the primary virulence factors of *Mycobacterium tuberculosis*, and how do they contribute to the bacterium's ability to evade the host immune response, persist in the human body, and cause tuberculosis?
 2. Describe the molecular mechanisms involved in the drug resistance of *Mycobacterium tuberculosis*, focusing on the role of genetic mutations in the development of resistance to first-line and second-line antitubercular drugs. How can these mechanisms be addressed through novel treatment strategies?
 3. Write in detail about Laboratory diagnosis of Tuberculosis.
- II. Answer ANY FOUR of the following** **4 x 5 = 20 Marks**
4. What is the role of the immune system in the defense against *Mycobacterium tuberculosis*?
 5. What is Koch's Phenomenon?
 6. Explain the role of the *Bacillus Calmette-Guérin* (BCG) vaccine in tuberculosis prevention.
 7. Discuss the difference between latent and active tuberculosis infections.
 8. Write a note on Photochromogens
- III. Answer the following** **5 x 2 = 10 Marks**
9. Antigens of *Mycobacterium tuberculosis*.
 10. RNTCP guidelines for grading of ZN stained sputum smears
 11. Write about Newer Anti-tubercular Drugs
 12. What is the significance of the tuberculin skin test (TST) in diagnosing Tuberculosis?
 13. Mechanism of action of Isoniazid