

**VINAYAKA MISSION'S RESEARCH FOUNDATIONS, SALEM  
(Deemed to be University)**

**Pharm.D DEGREE EXAMINATION - February 2020  
Second Year**

**PHARMACEUTICAL MICROBIOLOGY**

Time: Three hours

Maximum: 70 marks

I. Write essays on any **TWO** questions: (2 x 15 = 30)

1. Describe various methods of isolation and identification of bacteria by different biochemical tests.
2. Explain the different methods of sterilization. How do you sterilize the parenteral products?
3. Write in detail about sterility test for various pharmaceutical products.

II. Write short answers on any **SIX** questions: (6 x 5 = 30)

4. Write a detailed note on Rickettsia.
5. Write the composition and preparation of media for aerobic bacteria.
6. Describe the purpose and methodology involved in acid – fast staining.
7. Explain the various counting techniques of bacteria.
8. What are the merits and demerits of radiation sterilization?
9. Differentiate between disinfectants and antiseptics.
10. Write the importance of preservatives in pharmaceuticals, how do you evaluate them?
11. Describe about various immunization programme.

III. Write short notes on any **FIVE** question: (5 x 2 = 10)

12. What are the contents of viruses?
13. Define fungi.
14. What is validation?
15. What are the various divisions of microbial world?
16. Who is the inventor of gram staining? Mention the purpose of the gram stain.
17. Write a note on HIV.

\*\*\*\*\*