

**BHARATI VIDYAPEETH**  
**(DEEMED TO BE UNIVERSITY), PUNE, INDIA**  
**PhD Entrance Test – 2022**

**SECTION-II: Medical Microbiology - 50 Marks**

**General Microbiology**

1. Morphology of bacteria
2. Growth and nutrition of bacteria
3. Sterilization and disinfection
4. Culture media
5. Culture methods Identification of bacteria
6. Host parasite relationship
7. Bacterial genetics, genetic engineering and its applications
8. Antibacterial substances, mechanism of action, mechanism of drug resistance and antibiotic sensitivity testing
9. Quality control and quality assurance in microbiology
10. Automation in Microbiology laboratory
11. Laboratory biosafety & Biomedical waste management

**IMMUNOLOGY**

12. Antigen
13. Structure of Immunoglobulin's and properties of various Immunoglobulins
14. Complement
15. Antigen and antibody reactions
16. Structure and function of immune system
17. Immune response
18. Hypersensitivity
19. Immunodeficiency
20. Autoimmunity
21. Tumor immunity and transplantation immunity

**BACTERIOLOGY**

22. Staphylococcus
23. Streptococcus
24. Neisseria,
25. Corynebacterium diphtheriae
26. Bacillus
27. Clostridium
28. Nonsporing anaerobes,
29. Enterobacteriaceae- E.coli, Klebsiella , Proteus, Salmonella, Shigella
30. Vibrios, Halophilic vibrio
31. Pseudomonas and other non fermenters
32. Yersinia,
33. Haemophilus, Bordetella and Brucella
34. Mycobacteria
35. Spirochetes
36. Mycoplasma
- 37 Rickettsiae
- 38Chlamydia
- 39 Emerging bacterial pathogens
40. HACEK

**Virology:**

41. General properties of viruses
42. Laboratory diagnosis of viral infections
43. Herpes viruses
44. Orthomyxoviruses
45. Paramyxoviruses
46. Enteroviruses
47. Hepatitis viruses
48. Rhabdoviruses
49. Human Immunodeficiency viruses
50. Oncogenic viruses
51. Arboviruses
52. Emerging viral diseases
53. Corona virus

**Parasitology( Morphology, lifecycle, pathogenicity and laboratory diagnosis)**

54. Protozoan parasites of medical importance-  
Entamoeba, Giardia, Trichomonas, Leishmania, Trypanosoma, plasmodium, Toxoplasma, Cryptosporidium
55. Helminthology
  - A) Cestodes: -
  - b) Trematodes: -
56. Nematodes: Intestinal and tissue nematodes
57. Immunology of parasitic diseases
58. Recent diagnostic methods in parasitic infections

**Mycology( Morphology, pathogenicity and laboratory diagnosis)**

59. General properties of fungi, morphology, classification,
60. Laboratory diagnosis of fungal infections
61. Fungi causing superficial mycoses
62. Fungi causing subcutaneous mycoses
63. Fungi causing systemic infections
64. Opportunistic fungi
65. Mycotic poisoning
66. Antimycotic agents and sensitivity testing in fungal infections

**Applied Clinical microbiology**

67. Hospital acquired infections
68. Etiology and laboratory diagnosis of PUO, UTI, Meningitis, Diarrhea, Dysentery, Sexually transmitted diseases, URTI, Wound infections, LRTI, Zoonotic infections, food poisoning,
69. Recent advances in diagnostic technology
70. Outbreak investigations and disaster management
71. Biological warfare
72. Antimicrobial stewardship programme
73. Hospital infection control programme.