

**BHARATI VIDYAPEETH
(DEEMED TO BE UNIVERSITY), PUNE, INDIA
PhD Entrance Test – 2020**

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.