

MICROBIOLOGY

PAPER – I

Time : 3 hours
Max. Marks : 100

MICRO/D/12/18/I

Attempt all questions in order.
Each question carries 10 marks.

1. Outline the molecular methods used for detection of M. tuberculosis in clinical specimens. Briefly write about drug resistance in tuberculosis and methods of detection used for it. 5+5
2. Classify spirochaetes. Describe the morphological features, cultural characteristics, pathogenesis and laboratory diagnosis of the spirochaete causing relapsing fever. 2+(1+2+3+2)
3. Enumerate the HACEK group of bacteria. Describe their pathogenicity and methods of detection. 3+(4+3)
4. Discuss in brief about Amp C β -lactamases and their methods of detection. 5+5
5. Describe the Lab. diagnosis of Chlamydia trachomatis infection. 10
6. Describe non-culture techniques used for diagnosis of fungal infections. 10
7. Describe principles, methods and interpretation of antifungal susceptibility testing. 3+4+3
8. What is phaeohyphomycosis? What are its clinical manifestations? How is it diagnosed in the laboratory? 3+2+5
9. Describe virulence factors of candida albicans. 10
10. Discuss in brief about epidemiology, morphology, clinical features and laboratory diagnosis of infections caused by Penicillium marneffeii. 2+2+2+4

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PAPER – II

Time : 3 hours
Max. Marks : 100

MICRO/D/12/18/II

Attempt all questions in order.
Each question carries 10 marks.

1. Enumerate various blood concentration techniques and their uses in parasitology. Briefly discuss about thick blood film. 6+4
2. Enumerate various invasive procedures used for the diagnosis of parasitic disease along with the list of parasites for which they are used. Describe also the morphological form of the parasite which is detected. 7+3
3. Enumerate parasites causing autoinfection along with the method of autoinfection. 5+5
4. Define recrudescence and relapse in malaria. Briefly describe QBC and its advantage over microscopy. 4+6
5. Write about pathogenesis of lymphatic filariasis. Describe the laboratory tests for confirmation of diagnosis. Describe in brief the recent advances. 4+3+3
6. List the viruses causing hemorrhagic fever. Write the pathogenesis and laboratory investigations for the specific diagnosis of dengue hemorrhagic fever. 2+(4+4)
7. Define antigenic drift and antigenic shift in influenza virus. Mention the consequences of antigenic shift. How will you diagnose influenza in laboratory? 4+2+4
8. Discuss about the etiopathogenesis, epidemiology and diagnosis of chikungunya. 3+4+3
9. Describe the newer techniques used to detect and genotype hepatitis C virus. 10
10. What are oncogenes? How do they originate in normal cell. Name the oncogenic viruses and the type of cancers they cause in humans. 1+3+6

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PAPER – III

Time : 3 hours

Max. Marks : 100

MICRO/D/12/18/III

Attempt all questions in order.
Each question carries 10 marks.

1. Define community acquired pneumonia. List the microbial agents causing it. Describe your approach to its laboratory diagnosis. 1+4+5
2. List the risk factors and etiological agents causing keratitis. Describe its laboratory diagnosis. (2+4)+4
3. List the viruses that cause opportunistic infections in AIDS. Describe characteristics of any one of them. 2+8
4. Describe standard safety precautions. Describe the steps and importance of hand hygiene. 6+4
5. Define biomedical waste (BMW). How do you classify it? Discuss about BMW disposal policies in a 500 bedded hospital. 1+3+6
6. Enumerate immunofluorescence tests. Write the principle along with suitable examples of each. 2+8
7. Define quality control. Describe the measures to be adopted for quality control. How do you test for the quality control? 2+4+4
8. What do you understand by gene therapy? Describe its principle, uses and procedures. 2+8
9. Enumerate the agents used for bioterrorism. Describe the specimens and methods used for their identification. 3+(3+4)
10. What are the various classes of Biosafety Cabinets? Explain the principle of each. 4+6

FINAL EXAM
DECEMBER 2012

NATIONAL BOARD OF EXAMINATIONS

MICROBIOLOGY

PAPER – IV

Time : 3 hours
Max. Marks : 100

MICRO/D/12/18/IV

Attempt all questions in order.
Each question carries 10 marks.

1. Discuss the role of normal microbial flora in health and disease. 10
2. What are superantigens? Write their mechanism of action. Discuss their role in various diseases. 3+4+3
3. Define complement. Briefly write about the immunological and biological activities of complement components. 2+8
4. What do you understand by MHC? How would you detect HLA class II antigens in laboratory? What is the role of MHC in immune response? 2+4+4
5. What are monoclonal antibodies? Discuss the technique of hybridoma production. Enumerate the applications of monoclonal antibodies. 2+6+2
6. Write in brief about Robert Koch and his contributions to Microbiology. 10
7. Describe bacterial surface structures and their role in disease. 6+4
8. What are surface active disinfectants? List the commonly used disinfectants with their concentrations. Briefly describe their properties and uses. 2+6+2
9. Discuss briefly about the regulation and control of gene expression in bacterial cell. 10
10. What are pathogenicity islands? Name at least five bacteria exhibiting such pathogenicity islands. Describe anyone in detail. 2+2+6
