

## **XII Standard –Microbiology Model Question Paper**

**Time : 3 hours**

**Maximum marks :150**

**Note:**

1. Answer all the questions from Part I
2. Answer any fifteen questions from Part II
3. Answer only six questions from Part III
4. Question no. 71 is compulsory
5. Answer only four questions from Part IV
6. Draw diagrams wherever necessary

### **Part I**

**Note: Answer all the questions**

**50 x 1 = 50 marks**

**A. Choose the correct answer**

1. The credit of making a compound microscope goes to
  - a. Robert Hooke
  - b. Zaccharias
  - c. Knoll
  - d. Zernike
2. TCA cycle is also known as
  - a. Kreb' s cycle
  - b. Citric acid cycle
  - c. Amphibolic cycle
  - d. All the above
3. A substance acted upon by an enzyme is called
  - a. Co factor
  - b. Co enzyme
  - c. Substrate
  - d. Holoenzyme

4. Primary treatment of sewage removes which percentage of BOD?
  - a. 5-10
  - b. 15-20
  - c. 20-25
  - d. 30-40
5. Which of the following is resistant to decomposition?
  - a. Cellulose
  - b. Hemicellulose
  - c. Fructose
  - d. Lignin
6. Which of the following is used for the production of wine?
  - a. Acetic acid bacteria
  - b. Lactic acid bacteria
  - c. Propionic acid bacteria
  - d. Yeasts
7. A zone of complete clearing of blood around the colonies is called:
  - a. Alpha hemolysis
  - b. Beta hemolysis
  - c. Gamma hemolysis
  - d. All the above
8. Diphtheria toxin acts on which of the following?
  - a. Nucleic acid synthesis
  - b. Protein synthesis
  - c. Lipid synthesis
  - d. All the above
9. *Vibrio cholerae* is:
  - a. Gram negative rod
  - b. Gram positive rod
  - c. Gram negative curved rod
  - d. Gram variable rod

10. *Clostridium tetani* grows in
- Presence of oxygen
  - In the absence of oxygen
  - Both in presence and in absence of oxygen
  - Presence of carbon di oxide
11. *Leishmania donovani* is transmitted by:
- Ticks
  - Sand fly
  - Mosquitoes
  - Rat flea
12. *Candida albicans* produces
- Sporangio spores
  - Capsule
  - Pseudomycelium
  - All the above
13. HIV attaches to the CD4 receptors of
- T helper cells
  - B cells
  - Platelets
  - RBC
14. In Lyme disease, a red macule or papule that expands to form a large annular lesion is called:
- Psoriasis
  - Erythema migrans
  - Migrains
  - Larva migrans
15. Nurse cells are present in which organ?
- Skin
  - Intestine
  - Liver
  - Thymus

16. Which antibody appears first after primary infection?
- a. Ig A
  - b. Ig M
  - c. Ig G
  - d. All the above
17. Type I hypersensitivity is \_\_\_\_\_mediated
- a. Ig E
  - b. Ig M
  - c. Ig G
  - d. Ig A
18. In the indirect immunofluorescence test, which of the following is labeled with flurochrome?
- a. Specific antibody to antigen
  - b. Antibody to immunoglobulin
  - c. Antigen
  - d. All the above
19. The genetic code consists of how many codons?
- a. 64
  - b. 32
  - c. 128
  - d. 16
20. Which of the following is a stop codon?
- a. UGA
  - b. GCU
  - c. CAG
  - d. AAG

**Fill in the blanks ( Answer should be a line phrase or a word)**

21. \_\_\_\_\_is a complex and highly advanced microscope
22. The trickling filter is employed for\_\_\_\_\_treatment

23. Adhesion of streptococcus pyogenes to pharyngeal epithelial cells is mediated by-  
\_\_\_\_\_
24. Bacillary dysentery spreads by the \_\_\_\_\_ route
25. T.brucei gambiense is endemic in \_\_\_\_\_
26. Brucella infection in pregnant animals leads to\_\_\_\_\_
27. The harmful reaction of immune system is \_\_\_\_\_
28. The agents that cause mutations are called

**C. Say true or False**

29. The system of antiseptic surgery was developed by Joseph Lister
30. Bacillus thuringiensis is a bio fertilizer
31. Staphylococci are seen as chain
32. Cholera stool appears like a rice-water
33. Shigellae are gram negative cocci
34. Cryptococcus is a capsulated yeast cell
35. Lyme disease is caused by Borrelia burgdorferi
36. Thymus is located in the abdomen
37. Two types of light immunoglobulin chains are seen
38. Nirenberg-Khorana solved the structure of DNA

**D. Match the following**

- |                      |                        |
|----------------------|------------------------|
| 39. Brucella         | a. Meningitis          |
| 40. T.pallidum       | b. Typhoid fever       |
| 41. Edward Jenner    | c. Travelers diarrhoea |
| 42. Salmonella typhi | d. Syphilis            |
| 43. Escherichia coli | e. Malta fever         |
| 44. Cryptococcus     | f. Vaccine             |

**E. Give answer in one sentence**

45. Give two examples of air borne infections

46. Define mutualism
47. Name the toxins produced by *Clostridium tetani*
48. Give the names of two fungi that cause mycetoma
49. What is cysticercus?
50. What is erythroblastosis foetalis?

## **PART - II**

**Answer any fifteen questions**

**15x2=30 marks**

51. What is tyndalization?
52. Give two uses of fluorescence microscope
53. What are bactericidal agents ? Give examples
54. Define glycolysis
55. Define composting
56. What are the causes of food poisoning?
57. Define antibiotic
58. What is alpha hemolysis? Give examples of organisms producing it
59. State the characteristics of pseudomembrane seen in diphtheria
60. Give the structure of *Tetanus bacillus*
61. Give the list of diseases produced by *Chlamydia trachomatis*
62. Describe the structure of *Taenia solium*
63. Describe the cryptococcal clinical manifestations
64. What are the types of HSV?
65. What is Lyme borreliosis?
66. Define antigen
67. Name two enzymes used in ELISA test
68. What is toxoid ? State its characteristics
69. Define mutation
70. Define phenotype

### **PART - III**

**Answer any six questions. Question number 71 is compulsory**

**6 x 5 = 30**

71. Compare direct and indirect immunofluorescence tests or Describe the pathogenesis of cryptococcosis
72. Write short notes on enzyme regulation by feed back inhibition
73. Write the role of biofertilizers in agriculture
74. What are the clinical features of bacillary dysentery?
75. Describe the clinical features of tetanus
76. Explain the laboratory diagnosis and control of human taeniasis
77. Write notes on food preservation
78. Describe the structure of heavy chain of immunoglobulin molecule with diagram
79. Describe Ti plasmid with diagram

### **PART - IV**

**Answer four of the following questions**

**4 x 10 = 40 marks**

80. Discuss in detail the work of Louis Pasteur
81. How will you evaluate antimicrobial action of disinfectant?
82. Write the organisms, raw materials and industrial production of penicillin. What are the different types of penicillins?
83. Describe in detail the prophylaxis of diphtheria
84. Write in detail the structure, function and pathogenesis of cholera toxin
85. Explain in detail the epidemiology, prevention and control of brucellosis
86. Describe the development of T cells in thymus
87. Describe the production of transgenic animals