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Part III — MICROBIOLOGY

(New Syllabus)

(English Version)

Time Allowed : 3 Hours]

[Maximum Marks : 150

- Note :
- i) Answer all the questions from **Part - A**.
 - ii) Answer any *fifteen* questions from **Part - B**.
 - iii) Answer only *six* questions from **Part - C** including Question No. **71** which is compulsory.
 - iv) Answer only *four* questions from **Part - D**.
 - v) Draw diagrams wherever necessary.

PART - A

- Note :
- i) Answer all the questions.
 - ii) Each question carries *one* mark. 20 × 1 = 20

I. Choose and write the correct answer in your answer-book :

1. Dilute solution of carbolic acid is called as

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|---------------|-------------|
| a) Alcohol | b) Phenol |
| c) Chloroform | d) Halogen. |

2. The BOD limit of drinking water is below

- | | |
|----------|-----------|
| a) 4 ppm | b) 5 ppm |
| c) 3 ppm | d) 6 ppm. |

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11. The blue green algal biofertilizer is highly suitable for the growth of
- a) sugarcane
 - b) paddy
 - c) banana
 - d) coconut.
12. Streptococci are seen as
- a) chain
 - b) cluster
 - c) long rods
 - d) club shaped.
13. The ideal relationship between two partners because injury is dealt to either partners by the other is called
- a) Mutualism
 - b) Parasitism
 - c) Commensalism
 - d) Symbiosis.
14. Which of the following is commonly infected by Brucellosis suis ?
- a) Pigs
 - b) Goat
 - c) Sheep
 - d) Dog.
15. Antibodies are made up of which molecules ?
- a) Lipoprotein
 - b) Glycoprotein
 - c) Phospholipid
 - d) Apoprotein.
16. Which is the first clone mammal ?
- a) Molly calves
 - b) Polly calves
 - c) Guinea pigs
 - d) Dolly sheep.
17. Tuberculin type of hypersensitivity was discovered by
- a) Louis Pasteur
 - b) Robert Koch
 - c) Alexander Flemming
 - d) Edward Jenner.

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18. *Leishmania donovani* reproduces by which method ?

- a) Budding
- b) Multiple fission
- c) Binary fission
- d) Spore formation.

19. Mycetoma causing agents enter in human body through

- a) nose
- b) mouth
- c) blood
- d) minor trauma on the skin.

20. Hepatitis A virus belongs to the family

- a) Picornaviridae
- b) Zygovirus
- c) Retrovirus
- d) Retroviridae.

II. Fill in the blanks :

8 × 1 = 8

- 21. is used in the purification of municipal water in the form of compressed air.
- 22. The site of infection is in the Peyer's patches.
- 23. *Candida albicans* grow well in medium.
- 24. The substance which causes cancer is called
- 25. The cell wall of actinomycetes contains
- 26. The mechanism by which genetic materials are transferred from one bacteria to another is called
- 27. During Beta haemolysis the lysis takes place in cells.
- 28. Antibiotic Streptomycin was discovered by

III. Answer the following questions by writing *True* or *False* :

10 × 1 = 10

29. Chlamydae are large group of intracellular saprophyte.
30. Carditis is a most serious condition because it leads to permanent damage of heart valves.
31. Autograft is done usually in burn patient.
32. T cells can change their chromosomes during maturation.
33. Pertusis is a bacterial infection.
34. Woollorter's disease is also called as anthrax.
35. Among the eight species of Azolla, Azolla microphylla are widely distributed in Tamil Nadu.
36. In general sewage contains 93 percent water and 7 percent organic and inorganic materials.
37. The skin has a thick horny layer of cells that protect our body from infection.
38. Borrelia burgdorferi bacteria are transmitted through the bite of rat.

IV. Match the following :

6 × 1 = 6

- | | |
|---------------------------------|----------------------------|
| 39. Fasciola hepatica | a) Respiratory tract |
| 40. Cryptococcosis | b) Ampicillin |
| 41. Corynebacterium diphtheriae | c) Sterilizing agent |
| 42. Bacillary dysentery | d) Monoecious |
| 43. Ethylene oxide | e) Congenital syphilis |
| 44. Treponema pallidum | f) Central nervous system. |

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V. Answer the following questions in *one* sentence each : 6 × 1 = 6

45. Write the name of the organ in which tapeworm is found in the human body.
46. Write the names of the toxoids routinely used for immunization.
47. How many types of Herpes viruses have been shown to be common in all population ?
48. Give two examples of primary screening procedure.
49. Name the types of toxins produced by clostridium tetani.
50. Write any two characteristics of Shigella.

PART - B

Note : i) Answer any *fifteen* questions.

ii) Each questions carries *two* marks. 15 × 2 = 30

51. State cell theory.
52. Write any two uses of citric acid.
53. What is alpha haemolysis ?
54. Name any four enterobacteria found in the gastrointestinal tract of man.
55. What is direct life cycle ?
56. Write any two uses of fluorescent microscope.
57. What are disinfectants ? Give example.
58. State the properties of M-like protein.
59. Write the taxonomy of Azolla.
60. Differentiate between Gravis and Mitis types of *Corynebacterium diphtheriae*.

61. State the properties of alcohols. Give one example.
62. Write a short note on Hepatitis D virus.
63. What is tissue culture ?
64. Define immunization.
65. Draw and label the stages of multiplication of chlamydia inside the host cell.
66. Write any two applications of ELISA test.
67. What is erythroblastosis foetalis ?
68. What are transgenic animals ? Give example.
69. Write some factors which influence the activity of enzymes.
70. Draw and label the ultrastructure of promastigote of Leishmania.

PART - C

Note : i) Answer any *six* questions including Question No. 71 which is compulsory.

ii) Each question carries *five* marks.

$6 \times 5 = 30$

71. Describe the industrial process involved in wine production.
72. What are biofertilizers ? Explain their role in plant improvement.
73. Write a short note on Hepatitis C virus.
74. What are broad spectrum antibiotics ? Explain the history of antibiotics.
75. Differentiate elementary body from reticulate body of chlamydia.
76. Describe the structure and classification of Harpes virus.
77. List the characteristics of IgA.
78. What is conjugation ? Explain the process of conjugation in bacteria.
79. Write the differences between immediate and delayed hypersensitivity.

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PART - D

Note : i) Answer any *four* questions.

ii) Each question carries *ten* marks.

4 × 10 = 40

80. Explain tricarboxylic acid cycle.
 81. What is nitrogen fixation ? Explain nitrogen cycle.
 82. Explain the structure, symptoms and preventive measures of HIV.
 83. What is Botulism ? Explain different types of botulism with their clinical features.
 84. How will you evaluate the antimicrobial activity ?
 85. Write an essay on vaccine.
 86. Describe the methods of animal cell culture and write some products of animal culture.
 87. Explain the sources, spread and control of Bacillary dysentery.
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