

# ANSWERS

## I. Multiple Choice Questions (Type-I)

- |          |           |           |           |          |           |
|----------|-----------|-----------|-----------|----------|-----------|
| 1. (iv)  | 2. (iii)  | 3. (i)    | 4. (iii)  | 5. (i)   | 6. (i)    |
| 7. (i)   | 8. (ii)   | 9. (iv)   | 10. (ii)  | 11. (ii) | 12. (iii) |
| 13. (ii) | 14. (iii) | 15. (iii) | 16. (iii) | 17. (iv) | 18. (ii)  |

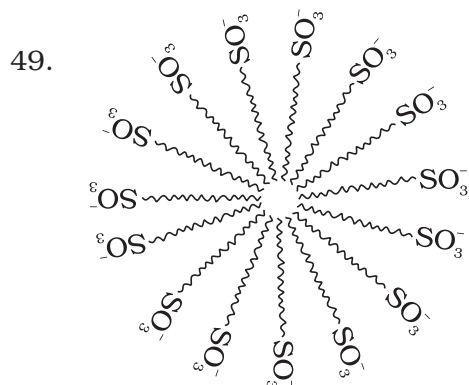
## II. Multiple Choice Questions (Type-II)

- |                |                      |                 |                      |
|----------------|----------------------|-----------------|----------------------|
| 19. (ii), (iv) | 20. (i), (iii)       | 21. (ii), (iii) | 22. (i), (ii)        |
| 23. (i), (ii)  | 24. (i), (ii), (iii) | 25. (iii), (iv) | 26. (ii), (iv)       |
| 27. (i), (iv)  | 28. (i), (iv)        | 29. (i), (iv)   | 30. (i), (iii), (iv) |

## III. Short Answer Type

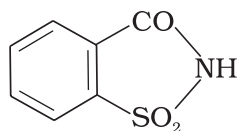
- ~100–500u.
- Medicines are used in diagnosis, prevention and treatment of diseases.
- Antiseptics are chemicals which either kill or prevent the growth of microorganisms and are applied to living tissues.
- Antiseptics, antibiotics and disinfectants.
- Receptors are embedded in cell membrane.
- Ulcer development in stomach.
- Sites different from active site of enzyme where a molecule can bind and affect the active site is called allosteric site. Some drugs may also bind at this site.
- Ionic bonding, hydrogen bonding, van der Waals interaction, dipole-dipole interaction.
- Arsphenamine possesses —As=As— linkage that resembles —N=N— linkages in azodyes.
- Tranquilizers
- Aspirin prevents platelet coagulation and thus has antiblood clotting action therefore can prevent blood clogging in heart.
- See page no. 444 of NCERT textbook for Class XII.
- These are potassium salts of fatty acids.
- Acid-base titration can be used to determine the excess amount of alkali in soap. The excess alkali left after hydrolysis of oil can be the source of alkalinity in soap.
- Detergents persist in water even after sewage treatment and cause foaming in river water.

46. Anionic detergent.
47. Cationic detergent.
48. Non-ionic detergents

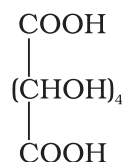


50. Less branching leads to easy biodegradability.
51. Soaps are biodegradable while detergents are quite stable because of branching in hydrocarbon chain hence cause water pollution.
52. Analgesics are neurologically active pain killing drugs that reduce or abolish pain without causing impairment of consciousness, mental confusion, coordination or paralysis or some other disturbances of nervous system.
53. A person suffers from depression when he has low levels of noradrenaline. Noradrenaline is a neurotransmitter that plays a role in mood changes. Low levels of noradrenaline lower the signal-sending activity and make the person suffer from depression.
54. Antiseptics are applied to living tissues whereas disinfectants are applied to non living objects.
55. Magnesium hydroxide is a better antacid because being insoluble it does not allow the pH to increase above neutral. Hydrogencarbonate being soluble, its excess can make the stomach alkaline and trigger the production of even more acid.
56. Narcotic analgesics which are obtained from opium poppy are called opiates. Examples are morphine and its derivatives like heroin and codeine.
57. Since narcotic drugs relieve pain and produce sleep, these are chiefly used for the relief of postoperative pain, cardiac pain and pain of terminal cancer and in child birth.
58. Drugs that bind to the receptor site and inhibit its natural function are called antagonistic drugs.
59. Antimicrobial drugs can kill the microorganism such as bacteria, virus, fungi or other parasites. They can, alternatively, inhibit the pathogenic action of microbes.

60. **[Hint : Glycerol.]**
61. Bathing soaps are potassium salts of long chain fatty acids while washing soaps are sodium salts of long chain fatty acids.
62. Dissolving soap in ethanol followed by evaporating the excess solvent.
63. Antacids control only the symptoms and not the cause. They work by neutralising the acid produced in the stomach. They do not control the cause of production of more acid. Antihistamines are the drugs that suppress the action of histamine which is the chemical responsible for stimulation of secretion of pepsin and HCl in the stomach. Antihistamines influence and prevent the binding of histamine with the receptors present in the stomach wall resulting in lower acid production and therefore, better treatment.
64. Histamine is a potent vasodilator. It contracts muscles in the gut and bronchi. It relaxes some other muscles e.g. in the walls of blood vessels. Histamine is also responsible for congestion in the nose associated with common cold and allergies. Also, histamine stimulates the release of pepsin and hydrochloric acid in the stomach.
65. See Class-XII NCERT, textbook page no. 444.
66. Enzymes have active sites that bind the substrate for effective and quick chemical reaction. The functional groups present at the active site of enzyme interact with functional groups of substrate via ionic bonding, hydrogen bonding, van der Waal interaction etc. Some drugs interfere with this interaction by blocking the binding site of enzyme and prevent the binding of actual substrate with enzyme. This inhibits the catalytic activity of the enzyme, therefore, these are called inhibitors.
67. Some substances are added to soap to affect the properties in order to make it useful for a particular application. Examples are sodium rosinate, sodium carbonate, etc. Sodium rosinate is added in laundry soaps, to increase lather and glycerol is added in shaving soaps, to prevent it from drying.
68. **[Hint : In such drinks artificial sweetening agents are present which do not metabolise hence do not produce any energy.]**
69. **[Hint : Plenty of salt and cover of oil act as preservative. These do not allow bacteria to thrive on them.]**
- 70.



Saccharin  
(Artificial sweetener)



Saccharic acid  
(obtained from oxidation of  
glucose by conc.  $\text{HNO}_3$ )

71. Sucrose
72. Aspartic acid and phenylalanine.
73. In cold foods and soft drinks.
74. Benzoic acid, sorbic acid, propanoic acid.
75. **Hint :** For answer see page no. 441 of NCERT textbook for Class XII.
76. **Hint :** For answer see page no. 442 of NCERT textbook for Class XII.
77. **Hint :** For answer see page no. 442 of NCERT textbook for Class XII.

#### IV. Matching Type

- |               |            |             |            |           |  |
|---------------|------------|-------------|------------|-----------|--|
| 78. (i) → (c) | (ii) → (d) | (iii) → (a) | (iv) → (b) |           |  |
| 79. (i) → (b) | (ii) → (a) | (iii) → (d) | (iv) → (c) |           |  |
| 80. (i) → (c) | (ii) → (d) | (iii) → (b) | (iv) → (a) |           |  |
| 81. (i) → (c) | (ii) → (d) | (iii) → (b) | (iv) → (a) |           |  |
| 82. (i) → (b) | (ii) → (d) | (iii) → (a) | (iv) → (e) | (v) → (c) |  |
| 83. (i) → (e) | (ii) → (f) | (iii) → (d) | (iv) → (g) | (v) → (b) |  |
|               | (vi) → (a) | (vii) → (c) |            |           |  |

#### V. Assertion and Reason Type

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|-----------|----------|---------|----------|----------|-----------|
| 84. (iii) | 85. (iv) | 86. (i) | 87. (iv) | 88. (iv) | 89. (iv)  |
| 90. (ii)  | 91. (iv) | 92. (v) | 93. (ii) | 94. (iv) | 95. (iii) |
| 96. (ii)  | 97. (ii) |         |          |          |           |

#### VI. Long Answer Type

98. **Hint:** For answer see NCERT textbook for Class XII.
99. **Hint:** For answer see NCERT textbook for Class XII.
100. **Hint:** For answer see NCERT textbook for Class XII.
101. **Hint:** For answer see NCERT textbook for Class XII.