

Chapter 16: Chemistry in Everyday Life

NCERT Exemplar · Class 12 · Chemistry

Questions

Question 1

Which of the following statements is not correct.

A.

Some antiseptics can be added to soaps.

B.

Dilute solutions of some disinfectants can be used as antiseptic.

C.

Disinfectants are antimicrobial drugs.

D.

Antiseptic medicines can be ingested.

Answer

Correct option: D

Solution

Option (iv) is the answer.

Question 2

Which is the correct statement about birth control pills?

A.

Contain estrogen only.

B.

Contain progesterone only.

C.

Contain a mixture of estrogen and progesterone derivatives.

D.

Progesterone enhances ovulation.

Answer

Correct option: C

Solution

Option (iii) is the answer.

Question 3

Which statement about aspirin is not true

A.

Aspirin belongs to narcotic analgesics.

B.

It is effective in relieving pain.

C.

It has an anti-blood-clotting action.

D.

It is a neurologically active drug.

Answer

Correct option: A

Solution

Option (i) is the answer.

Question 4

The most useful classification of drugs for medicinal chemists is _____.

(i) based on chemical structure.

(ii) on the basis of drug action.

(iii) on the basis of molecular targets.

(iv) on the basis of the pharmacological effect.

Solution:

Option (iii) is the answer.

Solution

Solution coming soon.

Question 5

Which of the following statements is correct?

the degradation of noradrenaline.

transfer from the nerve to the receptor.

A.

Some tranquilisers function by inhibiting the enzymes which catalyse

B.

Tranquilisers are narcotic drugs.

C.

Tranquillizers are chemical compounds that do not affect the message

D.

Tranquilisers are chemical compounds that can relieve pain and fever.

Answer

Correct option: A

Solution

Option (i) is the answer.

Question 6

Salvarsan is an arsenic-containing drug which was first used for the treatment of

_____.

A.

syphilis

B.

typhoid

C.

meningitis

D.

dysentery

Answer

Correct option: A

Solution

Option (i) is the answer.

Question 7

A narrow-spectrum antibiotic is active against _____.

(i) gram-positive or gram-negative bacteria.

(ii) gram-negative bacteria only.

(iii) single organism or one disease.

(iv) both gram-positive and gram-negative bacteria.

Solution

Option (i) is the answer.

Question 8

The compound that causes general antidepressant action on the central nervous system belongs to the class of _____.

(i) analgesics

(ii) tranquillizers

(iii) narcotic analgesics

(iv) antihistamines

Solution

Option (ii) is the answer.

Question 9

Compound which is added to soap to impart antiseptic properties is _____.

A.

sodium laurylsulphate

B.

sodium dodecylbenzenesulphonate

C.

rosin

D.

bithional

Answer

Correct option: D

Solution

Option (iv) is the answer.

Question 10

Equanil is _____.

(i) artificial sweetener

(ii) tranquillizer

(iii) antihistamine

(iv) antifertility drug

Solution

Option (ii) is the answer.

Question 11

Which of the following enhances the leathering property of soap?

A.

Sodium carbonate

B.

Sodium resinate

C.

Sodium stearate

D.

Trisodium phosphate

Answer

Correct option: B

Solution

Option (ii) is the answer.

Question 12

Glycerol is added to soap. It functions _____.

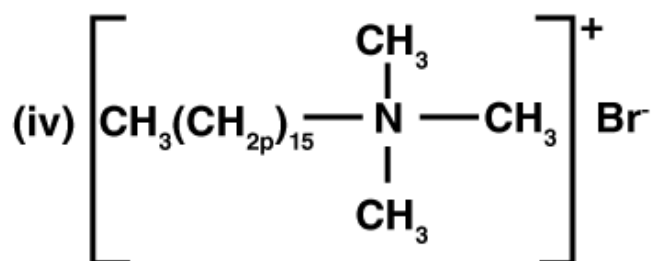
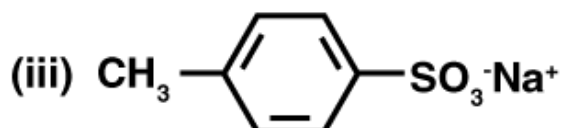
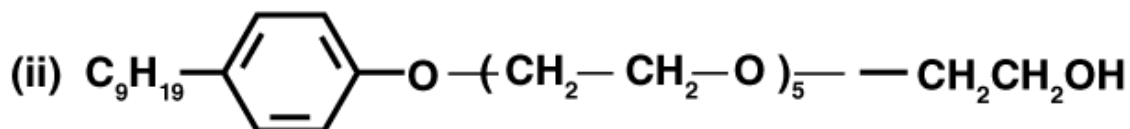
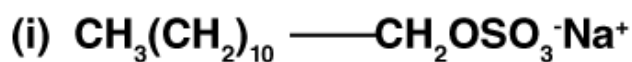
- (i) as a filler.
- (ii) to increase leathering.
- (iii) to prevent rapid drying.
- (iv) to make soap granules.

Solution

Option (iii) is the answer.

Question 13

Which of the following is an example of liquid dishwashing detergent?



Solution

Option (ii) is the answer.

Question 14

Polyethyleneglycols are used in the preparation of which type of detergents?

A.

Cationic detergents

B.

Anionic detergents

C.

Non-ionic detergents

D.

Soaps

Answer

Correct option: C

Solution

Option (iii) is the answer.

Question 15

Which of the following is not a target molecule for drug function in the body?

A.

Carbohydrates

B.

Lipids

C.

Vitamins

D.

Proteins

Answer

Correct option: C

Solution

Option (iii) is the answer.

Question 16

Which of the following statements is not true about enzyme inhibitors?

an enzyme.

A.

Inhibit the catalytic activity of the enzyme.

B.

Prevent the binding of substrate.

C.

Generally, a strong covalent bond is formed between an inhibitor and

D.

Inhibitors can be competitive or non-competitive.

Answer

Correct option: C

Solution

Option (iii) is the answer.

Question 17

Which of the following chemicals can be added for sweetening of food items at cooking temperature and does not provide calories?

A.

Sucrose

B.

Glucose

C.

Aspartame

D.

Sucralose

Answer

Correct option: D

Solution

Option (iv) is the answer.

Question 18

Which of the following will not enhance the nutritional value of food?

A.

Minerals

B.

Artificial sweeteners

C.

Vitamins

D.

Aminoacids

Answer

Correct option: B

Solution

Option (ii) is the answer.

II. Multiple Choice Questions (Type-II)

Question 19

Which of the following statements are incorrect about receptor proteins?

(i) Majority of receptor proteins are embedded in the cell membranes.

- (ii) The active site of receptor proteins opens on the inside region of the cell.
- (iii) Chemical messengers are received at the binding sites of receptor proteins.
- (iv) The shape of the receptor doesn't change during the attachment of the messenger.

Solution

Option (ii) and (iv) are the answers.

Question 20

Which of the following are not used as food preservatives?

- (i) Table salt
- (ii) Sodium hydrogen carbonate
- (iii) Cane sugar
- (iv) Benzoic acid

Solution

Option (ii) and (iii) are the answers.

Question 21

Compounds with antiseptic properties are _____.

- (i) CHCl_3
- (ii) CHI_3
- (iii) Boric acid
- (iv) 0.3 ppm aqueous solution of Cl_2

Solution

Option (ii) and (iii) are the answers.

Question 22

Which of the following statements about barbiturates is correct?

- (i) Hypnotics or sleep-producing agents.
- (ii) These are tranquillizers.
- (iii) Non-narcotic analgesics.
- (iv) Pain reduction without disturbing the nervous system.

Solution

Option (i) and (ii) are the answers.

Question 23

Which of the following are sulpha drugs?

- (i) Sulphapyridine
- (ii) Prontosil
- (iii) Salvarsan
- (iv) Nardil

Solution

Option (i) and (ii) are the answers.

Question 24

Which of the following are antidepressants?

- (i) Iproniazid
- (ii) Phenelzine
- (iii) Equanil
- (iv) Salvarsan

Solution

Option (i), (ii) and (iii) are the answers.

Question 25

Which of the following statements is incorrect about penicillin?

- (i) An antibacterial fungus.
- (ii) Ampicillin is its synthetic modification.
- (iii) It has a bacteriostatic effect.
- (iv) It is a broad-spectrum antibiotic.

Solution

Option (iii) and (iv) are the answers.

Question 26

Which of the following compounds are administered as antacids?

- (i) Sodium carbonate
- (ii) Sodium hydrogen carbonate
- (iii) Aluminium carbonate
- (iv) Magnesium hydroxide

Solution

Option (ii) and (iv) are the answers.

Question 27

Amongst the following antihistamines, which are antacids?

- (i) Ranitidine
- (ii) Brompheniramine
- (iii) Terfenadine
- (iv) Cimetidine

Solution

Option (i) and (iv) are the answers.

Question 28

Veronal and luminal are derivatives of barbituric acid, which are _____.

- (i) Tranquillizers
- (ii) Non-narcotic analgesic
- (iii) Antiallergic drugs
- (iv) Neurologically active drugs

Solution

Option (i) and (iv) are the answers.

Question 29

Which of the following are anionic detergents?

- (i) Sodium salts of sulfonated long-chain alcohol.
- (ii) Ester of stearic acid and polyethene glycol.
- (iii) Quarternary ammonium salt of an amine with acetate ion.
- (iv) Sodium salts of sulfonated long-chain hydrocarbons.

Solution

Option (i) and (iv) are the answers.

Question 30

Which of the following statements is correct?

- (i) Cationic detergents have germicidal properties
- (ii) Bacteria can degrade the detergents containing highly branched chains.
- (iii) Some synthetic detergents can give foam even in ice-cold water.
- (iv) Synthetic detergents are not soaps.

Solution

Option (i), (iii) and (iv) are the answers.

III. Short Answer Type

Question 31

What is the average molecular mass of drugs?

Solution

Drugs have an average molecular mass of 100-500u.

Question 32

Write the uses of medicines.

Solution

Medicines have an important role in our day-to-day life. It cures diseases. There are various types of medicines present in the form of tablets, syrups, ointments etc. It promotes and maintains health.

Question 33

What are antiseptics?

Solution

Antiseptics are those which are applied to the living body to prevent the growth of microorganisms. It is used in the case of cuts or wounds.

Question 34

Which type of drugs comes under antimicrobial drugs?

Solution

Mainly antimicrobial drugs are used to treat microbial functions. Examples like antiseptics, sulpha drugs and antibiotics come under this category.

Question 35

Where are receptors located?

Solution

Receptors are located on the cell surface membrane or within the cytoplasm. They are biological transducers.

Question 36

What is the harmful effect of hyperacidity?

Solution

Hyperacidity can cause an ulcer or gastric reflux in the stomach. The main cause of hyperacidity is the secretion of acid in an excess amount.

Question 37

Which site of an enzyme is called allosteric site?

Solution

This is the site other than the active site in which the drugs can bind and cause its action. They regulate chemical reactions occurring in the human body.

Question 38

What type of forces are involved in the binding of substrate to the active site of an enzyme?

Solution

- i) Van der Waal force
 - ii) hydrogen bonding
 - iii) dipole interactions
 - iv) ionic bonds etc., are involved in the binding of substrate.
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Question 39

What is the commonality between the antibiotic arsphenamine and azodye?

Solution

The type of linkage possessed by the antibiotic arsphenamine is similar to that of azodye. antibiotic arsphenamine possesses $-\text{As}=\text{As}-$ linkage which is similar to $-\text{N}=\text{N}-$ linkage in azodye.

Question 40

Which class of drugs is used in sleeping pills?

Solution

It contains tranquillizers as a drug which is designed for the treatment of fear, anxiety and mental distractions.

Question 41

Aspirin is a pain-relieving antipyretic drug but can be used to prevent heart attacks. Explain.

Solution

Aspirin prevents blood clotting in the heart as it has anti-blood-clotting action. This action helps in preventing heart attacks.

Question 42

Both antacids and antiallergic drugs are antihistamines, but they cannot replace each other. Explain why?

Solution

Antacids are used for the treatment of acid in the stomach, and antihistamines inhibit the action of histamine in the body. Both antacids and antiallergic drugs work on different receptors in the body, and hence they cannot replace each other.

Question 43

What is a soft soap?

Solution

They are easily soluble and contain potassium salts of fatty acids as a major component.

Question 44

If the soap has high alkali content, it irritates the skin. How can the amount of excess alkali be determined? What can be the source of excess alkali?

Solution

Excess of alkali can be found using acid-base titration.

The alkali that is formed during the hydrolyses of oil during soap preparation may be a cause of excess alkali in the soap.

Question 45

Explain why some times foaming is seen in river water near the place where sewage water is poured after treatment?

Solution

The foam is due to the non-biodegradable detergents which are present in water after sewage treatment. A detergent is a water-soluble cleansing agent which combines with impurities and dirt to make them more soluble.

Question 46

Which category of synthetic detergents is used in toothpaste?

Solution

Anionic detergents are used in toothpaste to clean teeth and form suitable foam. Eg: sodium or ammonium lauryl sulphate

Question 47

Hair shampoos belong to which class of synthetic detergent?

Solution

Cationic detergents are used in hair shampoos. eg: cetyltrimethylammonium bromide. Cationic detergents are quaternary ammonium salts of acetates, chlorides or bromides.

Question 48

Dishwashing soaps are synthetic detergents. What is their chemical nature?

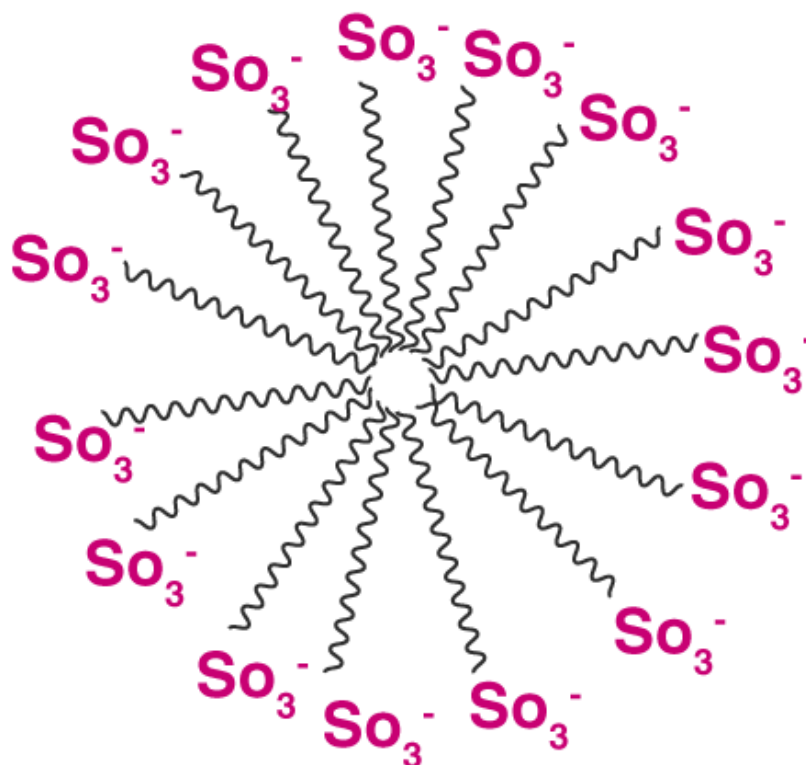
Solution

Detergents are synthetic detergents which contain non-ionic detergents that have cleansing properties. They combine with dirt and impurities and make them soluble.

Question 49

Draw the diagram showing micelle formation by the following detergent. $\text{CH}_3(\text{CH}_2)_{10}\text{CH}_2\text{OSO}_3\text{-Na}^+$

Solution



Question 50

How does the branching of the hydrocarbon chain of synthetic detergents affect their biodegradability?

Solution

The lesser the branching, the lesser the non-polluting nature of the detergent and an increase in branching causes the polluting nature of the detergent to increase.

Question 51

Why is it safer to use soap from an environmental point of view?

Solution

When compared to detergents, soaps are safer to use and are biodegradable. It doesn't have a polluting nature.

Question 52

What are analgesics?

Solution

The analgesic drug is a neurologically active drug which is used to reduce pain. They don't have any side effects.

Question 53

What is the scientific explanation for the feeling of depression?

Solution;

A hormone called Noradrenaline controls mood swings. Depression can be caused due to a low level of noradrenaline, which hampers the signal activities in the brain.

Solution

Solution coming soon.

Question 54

What is the basic difference between antiseptics and disinfectants?

Solution

1. Antiseptics are applied to living tissues, whereas disinfectants are applied to non-living substances
 2. Antiseptics are antimicrobial, whereas disinfectants are anti-microbial too
 3. Antiseptics are applied on cuts or wounds, whereas disinfectants are used on floors, toilets etc.
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Question 55

Between sodium hydrogen carbonate and magnesium hydroxide, which is a better antacid and why?

Solution

Magnesium hydroxide is a better antacid because it maintains a pH level in the stomach and is insoluble in the stomach. It does not make the stomach alkaline, whereas sodium hydrogen carbonate makes the stomach alkaline.

Class 12 Chemistry NCERT Exemplar Problems for Chemistry in Everyday Life

Chemistry in Everyday Life is one of the easiest and most interesting chapters of CBSE Class 12. In this chapter, students will learn how chemical compounds are helping humanity to live and stay healthy.
