

1. Short answer questions:
 - a) Define- i) soaps ii) Non-ionic detergents iii) Synthetic detergents
 - b) What is saponification? Write the reaction involved in preparation of soap.
 - c) Why are detergents preferred over soaps? Name one cationic detergent.
 - d) Write a brief note on anionic detergents.
 - e) Distinguish between soap and detergent
 - f) Soaps are biodegradable whereas detergents are non- biodegradable. Justify the statement.
2. Multiple type questions (Single correct option)
 - a) Soaps are formed by heating _____ with aqueous sodium hydroxide solution
 - i)Glycerol ii) Fatty acid iii) Ester of fatty acids iv) glyceryl ester of fatty acid
 - b) In preparation of transparent soaps, the solvent used is:
 - i)Water ii) Alcohol iii) Glycerol iv) Oil
 - c) The compound which gives lather in shaving soap is:
 - i) Sodium rosinate ii) Sodium silicate
 - iii) Sodium carbonate iv) Trisodium phosphate.
 - d) The by-product of saponification is:
 - i) Glycerine ii) Lye iii) Sodium chloride iv) Glycol
 - e) The mechanism of cleansing action of nonionic detergents is by:
 - i) Formation of Lather ii) Formation of foam
 - iii) Formation of Micelle iv) Formation of Scum

3. Comprehension type question: Read the passage given below and answer the questions given-

Soaps are cleansing agents and find application in daily life. They may be sodium or potassium salts of esters of fatty acids. Large variety of soaps are available in market right from bathing soaps to washing to shaving, to laundry etc. We also have perfumed ones, medicated ones, soap powders & liquid soaps.

Detergents are much in vogue these days and get preference over soaps because they work well in hard water. Synthetic detergents are classified into three categories- anionic, cationic, and nonionic. Each category has got specific use. Detergents with straight chain hydrocarbons are preferred over branched chain as the latter are non-biodegradable, cause foaming in water bodies even though they are subjected to effluent treatment, thus leading to water pollution.

- a) Why do detergents work well in hard water?
- b) Name the compound added to give antiseptic property to soap.
- c) Sodium laurylsulphate is a _____ detergent.
- d) Liquid dish washing detergents are example of _____ detergent.
- e) In cationic detergents the quarternary ion part acts as cleaning agent. True/False
- f) The alkali used to prepare potassium soaps is Potassium carbonate. True/False
- g) Write full form of SDS.
- h) Identify the detergents which are biodegradable.
- i) Foaming in water bodies is caused by _____.
- j) _____ are also called Invert soaps.

Answer key

1.Short answer questions:

- a) Define- i) soaps ii) Non-ionic detergents iii) Synthetic detergents
- b) What is saponification? Write the reaction involved in preparation of soap.
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- d) Write a brief note on anionic detergents.
- e) Distinguish between soap and detergent
- f) Soaps are biodegradable whereas detergents are non- biodegradable. Justify the statement.

2.Multiple type questions (Single correct option)

- a) Soaps are formed by heating _____ with aqueous sodium hydroxide solution
 - i)Glycerol ii) Fatty acid
 - iii) Ester of fatty acids iv) glyceryl ester of fatty acids Ans- iv
- b) In preparation of transparent soaps, the solvent used is:
 - i)Water ii) Alcohol iii) Glycerol iv) Oil Ans- ii
- c) The compound which gives lather in shaving soap is:
 - i) Sodium rosinate ii) Sodium silicate
 - iii) Sodium carbonate iv) Trisodium phosphate. Ans-i
- d) The by-product of saponification is:
 - i) Glycerine ii) Lye iii) Sodium chloride iv) Glycol Ans- ii

SOLUTION- Lye which contains glycerol
- e) The mechanism of cleansing action of nonionic detergents is by:
 - i) Formation of Lather ii) Formation of foam
 - iii) Formation of Micelle iv) Formation of Scum Ans- iii

3.Comprehension type question: Read the passage given below and answer the questions given-

Soaps are cleansing agents and find application in daily life. They may be sodium or potassium salts of esters of fatty acids. Large variety of soaps are available in market right from bathing soaps to washing to shaving, to laundry etc. We also have perfumed ones, medicated ones, soap powders& liquid soaps. Detergents are much in vogue these days and get preference over soaps because they work well in hard water. Synthetic detergents are classified into three categories- anionic, cationic, and nonionic. Each category has got specific use. Detergents with straight chain hydrocarbons are preferred over branched chain as the latter are non-biodegradable, cause foaming in water bodies even though they are subjected to effluent treatment, thus leading to water pollution.

Work sheet

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a) Why do detergents work well in hard water?

Ans- Calcium and magnesium salts of detergents are also soluble in water and do not form scum unlike soaps.

b) Name the compound added to give antiseptic property to soap.

Ans- Bithionol, Dettol, Savlon

c) Sodium laurylsulphate is a _____ detergent.

Ans- Anionic

d) Liquid dish washing detergents are example of _____ detergent.

Ans- Nonionic

e) In cationic detergents the quarternary ion part acts as cleaning agent. True/False

Ans- True

f) The alkali used to prepare potassium soaps is Potassium carbonate. True/False

Ans- False

g) Write full form of SDS.

Ans- Sodium4-(1-dodecy) benzenesulphonate

h) Identify the detergents which are biodegradable.

Ans- Straight chain hydrocarbons

i) Foaming in water bodies is caused by _____.

Ans- Branched chain hydrocarbons

j) _____ are also called Invert soaps.

Ans- Cationic detergents

Acknowledgement- The content is referred from: 1. Chemistry NCERT textbook part II Class XII

2. New course chemistry Part-II Class XII

3. Comprehensive chemistry Part-II Class XII

4. Content in some questions is self- generated