Short Answers and Questions

Q1: Define industrial chemistry?

Answer

The branch of chemistry which applies physical and chemical procedures towards the transformation of natural raw materials and their derivatives to products are benefit to humanity.

Q2: Give some benefits of chemistry in the field of science and technology.

Answer

There are immense benefits of chemistry in the field of science and technology. Some of these are food production health, hygiene, shelter, protection, decoration, recreation and entertainment.

Q3: Define industrial inorganic chemistry?

Answer

Industrial inorganic chemistry is the branch of chemistry which extract inorganic chemical substances make composites of the same and also synthesize inorganic chemicals.

Q4: Define industrial organic chemistry?

Answer

Industrial organic chemistry deals with the extraction and production of petroleum fuels, polymers, petrochemicals and other synthetic materials mostly from petroleum.

Q5: What are light organic industrial chemicals? Give examples.

Answer

The chemicals which are produced by the light organic industrials are termed as light organic industrial chemicals.

Examples

Pharmaceuticals, dyes, pigments, paints, pesticides, soaps, detergents and cosmetics.

Q6: What are heavy industrial organic chemicals? Give examples.

Answer

Heavy industrial organic chemicals are the chemicals which are produce from heavy organic industries.

Examples: Polymers, petroleum, petrochemicals.

Q7: What do you mean by BOC? Give examples.

Answer

BOC are basic organic chemicals which are produced directly from natural resources. Example: Ethylene, propylene etc.

Q8: What do you mean by BIC?

Answer

BIC are basic inorganic chemicals which are produced directly from natural resources. Example: Sulphuric acid, nitrogen, oxygen etc.

Q9: What are Commodity chemicals? Give examples.

Answer

Low — valued products produced ph large quantities in continuous processes and have general purpose grade.

Example: pigment flavors fragrance etc..

Q10: What are specially chemicals? Give examples?

Answer

High value adding involves the production of small quantities of chemical products for specific end uses, these are called specially chemicals. Examples: surfactants, adhesives, agrochemicals etc..

Q11: What are fine chemicals? Give examples?

Answer

High pure chemicals are called fine chemicals. Examples: pharmaceutical ingredients. etc.

Q12: What is atmosphere? Which raw materials we can get from it?

Answer

The atmosphere is the field above the ground level.

The raw materials can get are N_2. O_2. NOS. Ar. Kr and Xe .

Q13: Which raw materials we can get from hydrosphere?

Answer

Sea water is a source of chloride, magnesium and bromine.

Q14: Which raw materials are obtained from lithosphere?

Answer

Coal. natural gas. crude petroleum and other chemicals.

Q15: Which raw material can be derived from biosphere?

Answer

Oils. fats. axes. resins. sugar. natural fibers and leather etc.

Q16: What ate dyes? Give examples.

Answer

Dyes are the coloured compounds used in solution and are capable of fixing with a fabric.

Examples: methylene blue. naphthol yellow.

Q17: How dyes owes their colour?

Answer

Dyes owes their colour due to the presence of a chromophore

Q18: What are pesticides? Give examples.

Answer

The chemicals which are used by man to kill or control pests are called pesticides.

Q19: What are Nematicides? Give examples.

Answer

Nematicides u'e chemicals used to control nematodes. Examples: soil fumigants etc.

Q20: What are molluscicides? Give examples?

Answer

Molluscicides are chemicals used to snails and slugs.

Q21: What are petrochemicals? Give examples.

Answer

Petrochemicals are chemical products derived from petroleum or fossil fuels. Examples: olefins, aromatics, synthesis gas etc.

Q22: What are olefins? Give examples.

Answer

Olefins are the basic for polymers and oligomers which are produced mainly from hydrocarbons by chemical cracking. Examples, Ethylene, propylene, butadiene etc.

Q23: What are Aromatics? Give examples.

Answer

Aromatics are the basic raw material for dyes and detergents and mainly produced by catylic reforming.

Examples: Benzene. toluene, xylenes etc.

Q24: How much quantity

Answer

Ethylene is around 1 10 million ions per annum, propylene is 65 million ions and of aromatic raw materials are 70 million ions.

Q25: Enlist some chemicals produced from ethylene.

Answer

i) Polyethylene

ii) Ethanol

iii) Ethylene oxide

iv) Polyesters

v) Glycol ethers

vi) Vinyl chloride and many more.

Q26: Name chemicals produced from propylene.

Answer

i) Isopropyl alcohol

ii) Acrylonitrile

iii) Polypropylene

iv) Propylene oxide

v) Glycol ethers

vi) Allyl chloride

Q27: Give the names of some chemicals produced from benzene.

Answer

i) Cumene

ii) Ethylbenzene

iii) Cyclohexane

iv) Nitrobenzene

v) Alkyl benzene

vi) Chlorobenzene

Q28: Give the names of chemicals produced from Toluene

Answer

i) Benzene

ii) Toluene disocyanate

iii) Polyurethanes

iv) Benzoic acid

Q29: Give the names of chemicals produced from tollene.

Answer

i) Phthalic anhydride

ii) Dimethyl terephthalate

iii) Isophthalic acid

iv) Ortho xylene

v) Polyamide Resins

vi) Alkyd resins

Q30. What are polymers? Give example.

Answer

Polymers are high molecular weight compounds whose structures are made up of a large number of simple repeating units.

Example: polyethylene

Q31: What are addition polymers?

Answer

Addition polymers are formed by combination of alkenes monomers to produce a single huge molecule only.

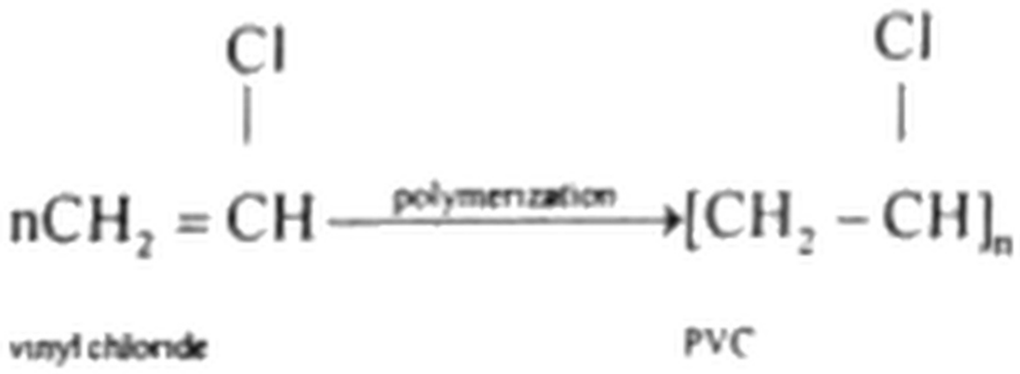
Example

$$\underset{\text{ethylene}}{nCH_2 = CH_2} \longrightarrow \underset{\text{polyethylene}}{CH_2 - CH_2 n}$$

Q32: How PVC is formed? Give its uses.

Answer

PVC i.e polyvinyl chloride is obtained by the polymerization of vinyl chloride.



Uses

PVC is used in the manufacturing of limitation leather, floor covering and gramophone records etc.

Q33: What are condensation polymers? Give example.

Answer

Condensation polymers are formed with the elimination of simple molecules such as

H_2O or CH_2OH

Example: Nylon — 6, 6

Q34: What are thermoplastic and thermosetting polymers?

Answer

A thermoplastic polymers icon which softens on heating and becomes hard on cooling.

A thermosetting polymer is one which becomes hard on heating and cannot be soften by heating.

Q35: What is heat spinning process?

Answer

Heat spinning process is the process in which involves the heating of fiber until it begins to melt, then drawing out the molten fiber with tweezers as quickly as possible. Then draw the molecules by aligning them in a parallel arrangement. This brings the fibers close together and allows them to crystallize and orient. Lastly, is heat setting. This utilizes heat to permeate the shape and dimensions of fabrics made from heat sensitive fibers.

Q36: Give uses of fibers.

Answer

Fibers are used for making clothes, ropes, fish nets, tents, carpets etc.

Q37: For which purpose glass fiber is used?

Answer

It is used in home insulation reinforcement of composite materials.

Q38: What is the use of synthetics in horticulture industry?

Answer

Synthetics are used to help plant growth better, to expanded polystyrene flakes, to phenolic resin foam and in urea-formaldehyde foam resins etc.

Q39: Which chemical is used as a nail polish remover?

Answer

Acetone and ethyl acetate are commonly used as nail polish remover.

Q40: Which raw materials are used in hair dyes?

Answer

The raw materials include:

i) Dyes e.g. 4-amino-2-hyroxylolyene

ii) Modifiers e.g. resorcinol

iii) Antioxidant e.g. sodium sulphate

iv) Alkalizers e.g. ammonium hydroxide