Chemistry and Industry

PART - A
Short Answer Questions (2M)

1. Why cement is called portland cement?

A. When cement mixed with water sets into a hard substance in a few hours. The result material is as strong as a rock available in portland hence cement is called portland cement.

2. Write the components of cement?

A. Cement consisting of calcium silicate and calcium aluminate to an extent of 90%. Iron oxide, sodium oxide, potassium oxide, magnesium oxide, dissolved sulphur trioxide etc. Constitute the remaining 10%.

3. What is ''raw slurry"?

A. In manufacturing of cement, wet processe is one of process. In wet process first the clay is purified by washing. The lime stone is crushed into small particles and mixed with purifed clay in proper proportions to get "raw slurry"

4. What is raw meal?

A. **Raw meal:** In manufacturing of cement by the day process the raw materials are mixed in proper proportions. The mixture is dried, pulverized and made uniform. The resultant powder is called 'raw meal'.

5. What is Batch?

A. Raw materials used for glass are soda ash (Na_2CO_3), Lime stone ($CaCO_3$) and sand (SiO_2). These materials are taken in required proportion and thoroughly mixed and ground to get fine powder called batch.

6. What is annealing?

A. Usually, glass obtained by rapid cooling is brittle. So glass is passed through a high temperature zone to low temperature zone in a long narrow chamber by a conveyer belt where it cools slowly giving transparent glass. This process is called annealing.

7. Write about glass blowing?

A. Glass - blowing is a technique by which glass articles are shaped by melting glass and blowing air into it till desired shape is obtained. The glass article is heated on a oxy-acetylene flame till red hot and air is blown by mouth or by a machine. Glass blowing is possible with pyrex and/or borosilicate glasses.

8. Write the uses of ceramics?

A. Ceramics are used in
i) The construction of buildings as bricks and tiles.
ii) The metal industries as refractory materials
iii) The chemical industry as stoneware and porcelain
iv) drainage and sewage as stoneware
v) Sanitation as earthenware and vitreous china.

vi) Electrical industry as unsulators and procelain.

9. Write the differences between simple pottery and earthen ware

A.

Simple Pottery	Earthen Ware
1. Made from common clays.	1. Made from red clays, gray clays etc.
2. They are not very strong	2. They are harder than simple pottery.
3. The articles are not glazed.	3. They are glazed.
4. In their manufacture, they heated to 11000°C	4. In their manufacture they are to 1450 - 1800°C

10. Why plastics find a large number of applications?

A. Plasticcs find a large number of applications because of their toughness excellent resistance to corrosion, water, heat and pressure. They can fabricated easily. Plastics can be produced in different colours.

11. Give some examples of natural resins?

A. The polymeric organic substance is called resin. The natural resins are 1) Rosin, 2) Shellac lignin, 3) Cellulose nitrate, 4) Casein formaldehyde.

12. Give a list of different types of adhesives, their properties and uses?

A.

Name of Adhesive	Properties and uses
1. Natural adhesive: Gum - Arabica.	1. Cheap, water soluble and used for paper.
2. Synthetic adhesive. Urea formaldehyderesin.	2. Water resistant, wood, work, plywood and lamiantion.

13. Write the example of Natural Fibres?

A. Examples of natural fibres are

1) Cotton 2) Jute 3) Wollen

14. Write two common methods of spinning?

A. The two common methods of spinning fibres are

1) Melt Spinning: The molten polymer is pumped through a porous net called spinnernet jet and allowed to cool to give fibre. Fibres of Nylon and Dacron are made by this method.

2) Dry Spinning: The polymer solution in a low boiling solvent is pumped through spinnernet.

The solvent is evaporated by hot air outside the spinnernet leaving the polymer fibre. This method is suitable for cellulose acetate and orlon.

15. What are the constituents of Nail Polish?

A. The nail polish consists of a polymeric resin, a plasticizer, colouring pigments and perfume dissolved in a mixture of low boiling solvents.

16. What are the examples of natural dyes?

A. Indigo from leaves of indigo plants, turkey red from roosts of madder plant, tyrian purple from snail are some examples of natural dyes.

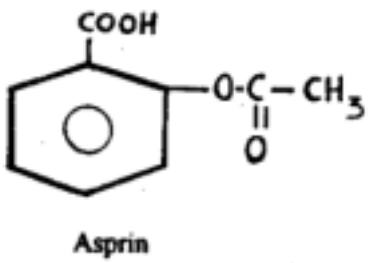
17. What are the requirements of an ideal drug?

A. An ideal drug should the following requirements.

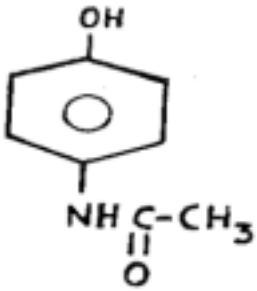
1) It's action should be localized and the site of ailment
2) Its action should be efficient
3) It should be toxic.
4) It should not have side effect.
5) It should not injure patients body tissues or disturb normal physiological processes.

18. Write the structures of Aspirin and Paracetemol?

A.



Asprin



Paracetemol

19. What are the important constituents of petroleum?

A. Petroleum is mainly composed of various hydrocarbons, viz., straight chain paraffins, olefines, aromatic hydrocarbons and naphtahs.

Section - II
Very Short Answer Questions (1M)

1. Write the raw material required for cement manufacture?

A. The raw materials required for cement manufacture are 1) Lime stone 2) Clay

2. What is the chemical composition of Glass?

A. The chemical composition of Glass is mixture of sodium silicate, calcium silicate and sand.

3. What are the raw materials in the manufacture of Glass?

A. Raw materials use for glass are

1) Soda ash (Na_2CO_3)

2) Lime Stone ($CaCO_3$)

3) Sand (SiO_2)

4. What is cullet and what is its use?

A. **Cullet:** In manufacturing of glass, "Batch" is mixed with some broken glass called cullet.

Use: Cullet helps in lowering the melting temperature of raw materials.

5. What is glass - gall?

A. Glass - gall is the impurity in the manufacturing of glass.

6. What are the chief raw materials required for manufacture of ceramics?

A. The chief raw materials required for manufacture of ceramics are

i) Clay ii) Felspar iii) Sand

7. What is pulverization?

A. The mixture of raw materials is ground to a fine powder. The process is known as pulverization.

8. What is a plastic?

A. Plastic may be defined as polymeric organic material together with small amounts of other materials like fillers, plasticizers, lubricants etc.

9. Define adhestives?

A. **Adhesives:** The yare the substances capable of holding materials together by surface attachment.

10. How many types of Adhesives?

A. Adhesives are two types. They are

1) Natural adhesives

2) Synthetic adhesives

11. Write important methods of spinning a fibre?

A. There are four important methods of spinning a fibre. They are melt, dry, wet and core spinnings.

12. What is a cosmetic?

A. Any substances, preparation or treatment applied to the person to cleanse, beautify after the appearance or to promote the attractiveness of the person is called cosmetic.

13. What are the characteristics of good cold cream?

A. A good quality cold cream melts at body temperatue and spreads readily over the skin. It should not be sticky and greasy.

14. What are the main contents of cold cream?

A. Cold creams mainly contain almond oil, beeswax and rose water with some prefumes.

15. How can you modify cream quality?

A. The cream quality can be modified by adding some additional ingradients like butter, olive-oil, mineak oil, lanolin oil, borax and paraffin wax in varying amounts.

16. What is a dye?

A. **Dyes :** Dyes or dyestuffs are coloured substances capable of imparting their colours to fibres.

17. Name two chromophores?

A. The important choromophores are
– NO_2, – NO, – N = N –, C = 0, C = S

18. Name two auxochromes?

A. The important auxochromes are
– OH, – COOH, – SO_3H, – NH_2

19. Write the raw material required for cement manufacture?

A. A chromogen (or chromophore) imparts colour to the dye.

20. What is the function of auxochrome?

A. The auxochrome group performs two functions
i) It intensifies the colour of the dye and
ii) it forms chemical bond with the fibres and attaches the dye to the fibres.

21. What is mordant dyes?

A. Certain soluble dyes react with metal ions and form insoluble dyes. These are called mordant dyes.

22. What is a drug?

A. **Drug:** It is a substances used in prevention, treatment or cure of a disease.

23. What are pharmaceuticals?

A. Pharmaceuticals: They are drugs given to the patient in one or other modified form.

24. Name two hormones?

A. Insulin, Cartisone.

25. What is refining of petroleum?

A. Petroleum is a mixture of many organic compounds. Purification of petroleum and separation of its constituents into useful products is called refining of petroleum.

26. What is a petroleum?

A. Petroleum is a dark greenish brown, viscous oil found in earth's crust.

27. What is cracking?

A. **Cracking:** Cracking is decomposition of bigger hydrocarbon molecules into simple hydrocarbons at high temperature and pressure using catalysts.

28. What is straight run petrol?

A. Petrol may be directly obtained from petroleum during fractionation. This is called straight run petrol and forms only 20% of the crude oil.

29. What is the advantage to use LPG as motor fuel?

A. LPG use as a motor fuel as it is cheaper than petrol and burns without any residence.

30. What is micro fertilizer?

A. The fertilizer containing micro nutrients such as B, Cu, Mn, Zn and Fe are called micro fetrilizers.

Section - III
Long Answer Questions (4M)

1. Describe the manufacture of Cement?

A. The raw materials requird for cement manufacture are 1) Lime stone which provides calcium and ii) Clay which provides aluminium and silica.

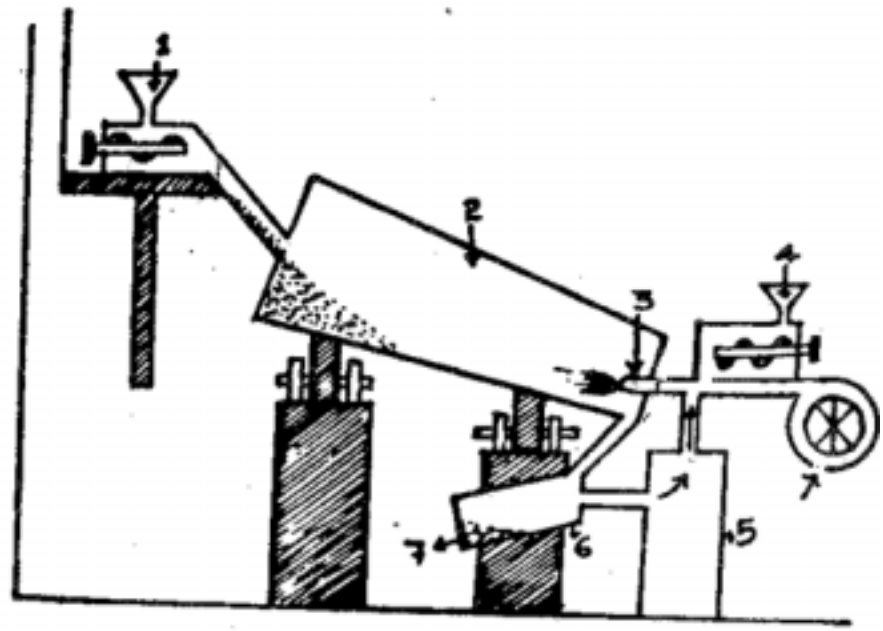
In the manufacturing of cement there are two methods, these are
1) Wet process
2) Dry Process

Wet Process: In the wet process, first the clay is purified by washing in a wash mill. The lime stone is crushed into small particles and mixed with purified clay in proper portion to get raw slurry. The slurry contains 40% of water and and is made uniform by a mixer machine.

Dry Process: In this process the raw materials are mixed in proper portions.The mixtuer is dried, pulverized and made uniform. The resultant powder is called raw meal.

The raw slurry or raw meal obtained by one of the above processes called 'charge' is introduced into a rotary kiln. The rotary kiln consists of a steel cylinder about 150 m long and 4m diameter and rotates 30-60 turns per hour. At one end of the cylinder a screw conveyer is arragned which slowly allows the charge into the cylinder. At the other end of the cylinder, a burner is arranged. coal or burning oil or gas is burnt at this end as shown in the figure.

The charge entering the cylinder slowly moves towards the hot end. During passage it loses water in the beginning and then carbon dioxide. At the burning end of the kiln, the temperature is around 1700-1900°C. At this end some chemical reactions take place between calcium oxide and aluminium silicate. A mixture of calcium silicates and calcium aluminates is formed. The resultant product consists of gray hard balls called "Chinker Cement". The clinker is cooled, ground to fine powder mixed with 2-3% of gypsum. It is transported in air tight bags.



1. Hoppar for Raw material
2. Rotary Kilin
3. Burner
4. Hopper for coal dust
5. Dust chamber
6. Cooler
7. Cement Clinkar

2. Write different steps in manufacture of glass?

A. The manufacture of glass involves three steps

i) Fusion of raw materials

ii) Working with molten mass

iii) Annealing

i) Fusion of raw materials: Raw materials used for glass are soda ash (Na_2CO_3), lime stone ($CaCO_3$) and Sand (SiO_2). These materials are taken in required proportion and thoroughly mixd and ground to get fine powder called batch. This batch is mixed with some broken glass called cullet. Cullet helps in lowering the melting temperature of raw materials. The whole mass is heated to 1000°C in a furnace. The following chemical reaction takes place and give glass in the liquid state.

$Na_2CO_3 + CaCO_3 + 4\ SiO_2 \rightarrow Na_2.SiO_3.CaSiO_3.4SiO_2 + 2CO_2$

impurities called glass - gall rise to the surface and are removed. At this stage metal salts are

added to get coloured glasses.

ii) working with molten mass : The fused mass obtained in the above step is allowed to cool but still maintained in the liquid state. The liquid glass is poured into moulds of required shape.

iii) Annealing: Usually, glass obtained by rapid cooling is brittle. So glass is passed through a high temperature zone to low temperature zone in a long narrow chamber by a conveyer belt where it cools slowly giving transparent glass. This process is called annealing. Annealing strengthens the glass.

3. Write the properties and uses of different types of glasses?

A. The properties and uses of different types of glasses are

1) Soda glass (or soft glass) : Easily fusible used for window glass and bottles.

2) Pyrex glass: Used for laboratory glass ware.

3) Quartz glasses: They are used in electrcal bulbs and optical instruments.

4) Flint Glass: It is used in optics.

5) Hard Glass: Fuses with difficulty, resistant to water and acids, used for hard glasss apparants.

6) Borosilicate Glasses: In heating they expand very less. They resist to shock and chemicals used for baking dishes. They are used in laboratory glassware and pipe lines.

4. Write the properties and uses of different types of glasses?

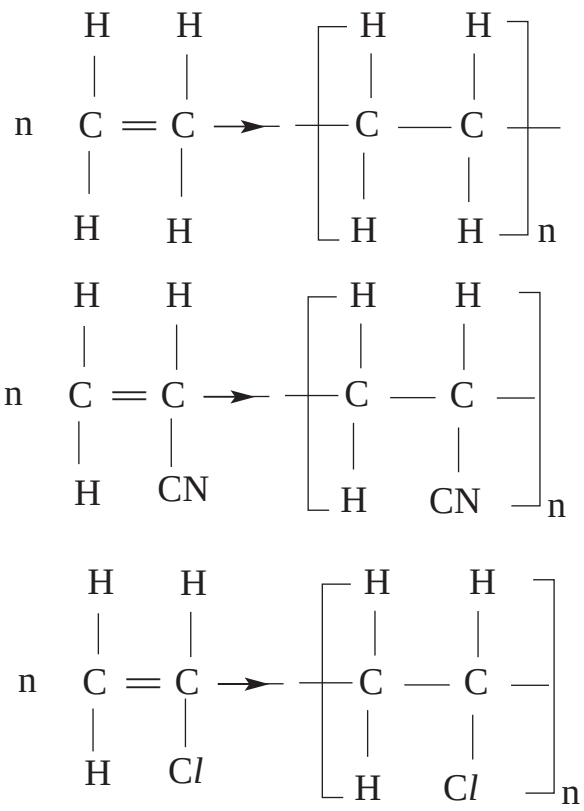
A. The term pottery includes wares such as earthen ware, wall tiles, electrical insulators, sanitary wave etc. Pottery ware may be divided into two types. They are simple pottery (terra-cotta) and earthen ware.

Simple Pottery: This includes pottery ware made from common clays. It gives porous pottery like pots, jugs, common bricks, tiles etc. The articles are not glazed. After drying, these articles are heated to 1100°C only. So, they are not very strong.

Earthen ware: Earthen ware articles are made from red clays, gray clays etc. These are subjected to high temperature of about 1400°C to 1800°C. So, they are harder than simple pottery. The glazing materials like Quartz, felspar a little borax and a little lead oxide are finely ground and then mixed with water to get a slurry. The article is dipped in the slurry and fired a high temperature to get the glaze.

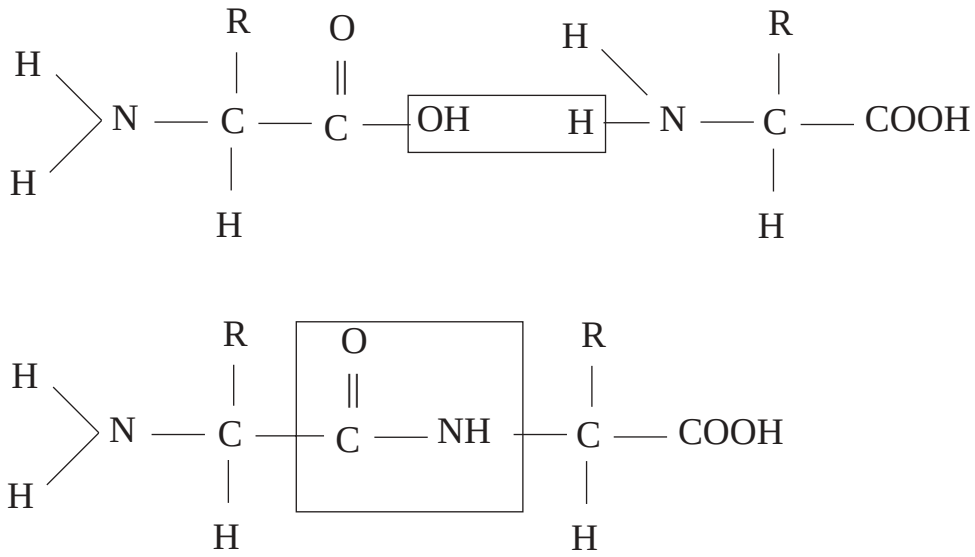
5. Describe addition polymerization with examples?

A. In addition polymerization a large number of monomers are added to produce a long chain polymer. These chains are folded into three dimensional structure and produce bulk mass called resin. Alkenes and alkene derivatives undergo addition polymerization as shown in the figure.



6. Describe condensation polymerisationi with examples?

A. **Condensation Polymerization:** The process of polymerization in which two monomer units are joined by elimination of simple molecules like H_2O, NH_3 alcohol (ROH) etc is called condensation polymerization. Polypeptides derived from amino acids are examples of condensation polymers.



7. Write different types of polymers and their uses?

A. The polymers and their uses are

1) Polyt ethylenes: They are used in milk cartons, carry bags, rain coats, toys, electrical insulators, containers.

2) Poly styrene: It is used in mak in insulation, combs, ceiling tiles, packing materials, TV, refrigerator linings.

3) Poly Vinyl Chloride: PVC is used for making pipes, hand bags, gram phone records, electrical insulation, floor coverings.

4) Polyesters: They are used in manufacturing films, recording tapes packing and fibres for textiles.

Nylon 6, 6: It is used in making bristles and burshes, carpets and fabrics, elastic nosiery.

8. What are characteristics of plastics for fibre making?

A. The requirements for a polymer to be used as fibre are as follows:

1) Polymer should had high tensile strength so that strong fibres may be obtained.
2) It should withstand pressure and temperature of washing and ironing.
3) It should resist hydrolysis due to bases during washing
4) It should be capable of being dyed
5) It should resist the effect of dry cleaning solvents.
6) It should be resistant to sun light, heat and air oxidation.

9. What are the characteristics of good quality face powder?

A. The characteristics of good quality face powder are

1) Opacity (Covering Powder)
2) Slip (Ease of distribution)
3) Adherence (Sticking to the skin)
4) Absorbency (Power of absorbing oil and sweat)
5) Fine ness (Size of the powder particles)

10. What are the commonly used ingredients in the face powder?

A. Commonly used ingredients in the face powder are

1) For Opacity: Titanium dioxide, colloidal clay, zinc oxide and magnesium oxide.
2) For slip: Talc (magnesium silicate) soaps containing calcium, magnesium salts.
3) For adhrence: Calcium stearate, zinc stearate, magnesium stearate, collodial clay.
4) For absorbency: Calcium carbonate, magnesium carbonate, kaolin.
5) For Colour: Lakes (red clay) and pigments, natural earths like ochers and umbers.
6) For Perfume: Scents and aromatics.

11. Write about the structural features of dyes?

A. **Sturcutral Features of dyes:**

i) Dyes are coloured substances capable of imparting their colours to fibres.

ii) Dyes containa chromogen (or) (chromophore) and an auxochrome group.

iii) The important chromophores are – NO_2, – NO, – N = N –, C = O , C = S.

iv) The chromphore imparts colour to the dye.

v) The auxochromo group performs two functions.

a) It intensifi the colour of the day

b) It forms attaches the dye to the fibres.

vi) Some important auxochromes are – OH, – COOH, – SO_3H, – NH_2, NHR, NR_2

vii) Molecules only with chromophore are coloured but cannot be applied to fibre and molecules only with auxochrome do not impart any colour.

12. What are the six types of drugs?

A. Drugs may be classified into six types depending upon the therapeutic action

1) Drugs acting on central nervous system (acting on brain and spinal chord)

2) Drugs acting on peripheral nervous system (acting on body nerves)

3) Cardiovascular drugs (acting on heart and blood circulation)

4) Chemotherapeutic drugs (acting on foreign bodies like protozoan, bacteria, fungi and helminths)

5) Vitamins (A, B, C, D, E and K)

6) Harmone (Insulin, Cartisone)

13. Write a short note on making of tablets?

A. **Tablet making:** Tablets are made by compression of the powder under high pressure. There are two methods of tablet making. They are 1) dry method and 2) wet method. In the dry method all the ingredients are granulated and screened through a mesh sieve. The dry granules are compressed and packed. In the wet method the powdered drug and other ingredients are dispersed in a binder excipient uniformly and screened through a mesh sieve. The granules are dried on trays in hot-air ovens and compressed to get tablets and the tablets are packed.

14. What is the refining of crude petroleum and discussed different steps involved in it?

A. **Refining of crude petroleum:** Purification of petroleum and separation of its constituents into useful products is called refining of petroleum.

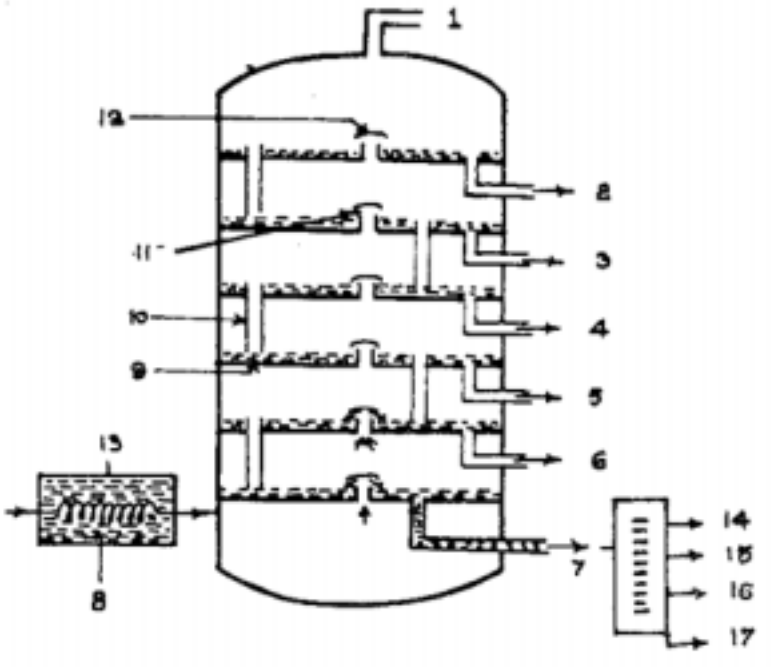
The process of refining involves three steps 1) Separation of water 2) Removal of sulphur compounds and 3) Fractionation

1) Separation of Water: Crude oil is a stable mixture of oil and salt water. To separate water, the petroleum is flown between two highly charged electrodes. Water droplets are formed at electrodes and separated out.

2) Removal of Sulphur Compounds: The oil free from water is treated with copper oxide. The sulphur containing petroleum reacts with copper oxide to form copper sulphide precipitate. This precipitate is removed by filtration.

3) Fractionation: The crude oil is heated up to 400°C in an iron still. All the constituents are evaporated except the residue cake called "asphalt". The vapours are passed through a fractionating column. The fractionating column is a tall cylindrical tower. It contains a number of horizontal stainless steel trays. Each tray is provided with a chimney which is covered by a loose cap. This is shown in the figure. As the vapours go up they are gradually cooled and condensation takes at different heights of the column depending upon the boiling point of the component. Fractions with high boiling temperature condense first at the lower trays and the fractions having low boiling temperatures condense in the upper trays. After fractionation the principal products obtained are

a) Uncondensed gas (fuel)
b) Petroleum Ether (Solvent)
c) Naphtha (Fuel and Solvent)
d) Kerosene (Motor Fuel)
e) Diesel Oil (fuel for diesel engines)
f) heavy oil (Lubricating Oil)
g) residue (road tar)



1. Uncondensed gases
2. Petroleum ether
3. Petrol
4. Naphtha
5. Kerosene
6. Diesel
7. Heavy oil
8. Crude oil
9. Tray
10. Pipe
11. Chimney
12. Loose cap
13. Heater
14. Lubricating oil
15. Petroleum jelly
16. Grease
17. Paraffin wax

Fractionation in Petroleum

15. What are fertilizers? Give their types with examples?

A. **Fertilizers:** Fertilizer are the synthetic chemicals

The commonly used fertilizerss in agriculture can be divided into three types viz 1) Potassium fertilizers 2) Nitrogen Fertilizers 3) Phosphorous Fertilizers as they provide potassium (K), nitrogen (N) and phosphorous (p) respectively.

KCl, K_2SO_4, KNO_3 are the examples of potassium fertilizers.

NH_4NO_3, NH_4Cl, NH_2CONH_2 are the examples of nitrogen fertilizers.

$Ca(H_2PO_4)_2$, $NH_2H_2PO_4$, $(NH_4)_2PO_4$, $(NH_4)_3PO_4$ are the examples of phosphorous fertilizers.

Another division of fertilizers 1) Single fertilizers 2) Compound Fertilizers 3) Mixed Fertilizers

Single Fertilizers: The fertilizer which can give only one nourishing element is called single fertilizer.
Eg: NH_4Cl, NH_4NO_3, KCl, $Ca(NO_3)_2$ etc.

Compound Fertilizers: Certainn fertilizers can provide two nutrient elements and hence called compound fertilizers.
Eg: KNO_3, mono, di and tri ammonium phosphate

Mixture Fertilizers: These fertilizers provides all the nurtient elements nitrogen (N), Potassium (K), Phosphorus (P)
Eg: Nitro phosk

V Diagrams

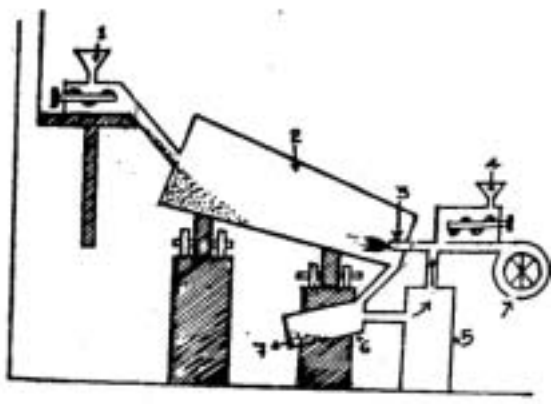
1. Sketch the structure of aniline yellow dry molecule?

A.

Structure of Aniline Yellow dye
1) Chromophore 2) Auxo Chrome

2. Sketch the cement manufacture plant?

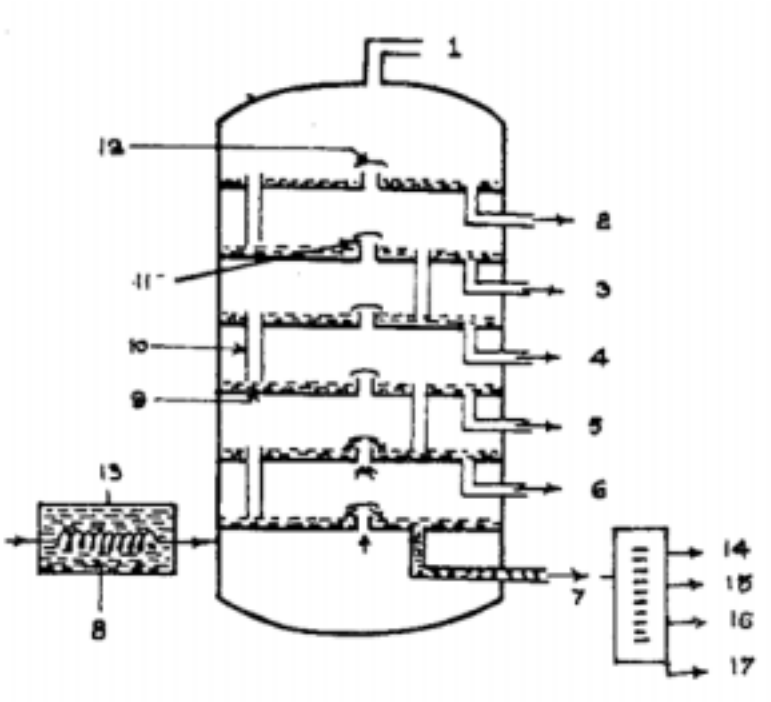
A.



1. Hoppar for Raw material
2. Rotary Kilin
3. Burner
4. Hopper for coal dust
5. Dust chamber
6. Cooler
7. Cement Clinkar

3. Draw the diagram of fractional in petroleum?

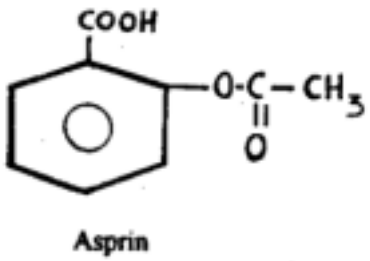
A.



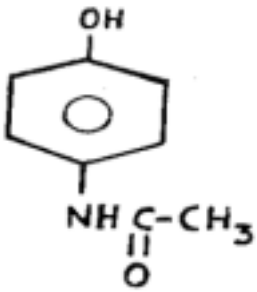
1. Uncondensed gases
2. Petroleum ether
3. Petrol
4. Naphtha
5. Kerosene
6. Diesel
7. Heavy oil
8. Crude oil
9. Tray
10. Pipe
11. Chimney
12. Loose cap
13. Heater
14. Lubricating oil
15. Petroleum jelly
16. Grease
17. Paraffin wax

4. Sketch the structure of any one drug molecule?

A.



Asprin



Paracetemol

PART - B
Multiple Choice Questions

1. Cement is a mixuture of

a) Sodium silicate and gypsum
b) Calcium silicate and Calcium aluminates
c) Sand, Clay and felspar
d) Calcium Carbonate and Sand

2. Glass is a

a) Transparent material
b) Transulecent material
c) Opaque material
d) a and b

3. Glass is a

a) Cyrstalline Substance
b) Non Crystalline Substance
c) Amorphous Substance
d) b and c

4. Glass - blowing is possible with

a) Flint Glass
b) Pyrex Glass
c) Soda Glass
d) Hand Glass

5. In the manufacturing of ceramics calcination takes place at which temperature?

a) between 600°C and 900°C
b) between 500°C and 900°C
c) between 700°C and 900°C
d) between 600°C and 100°C

6. Terra-Cotta articles are

a) Glazed
b) Porous
c) Hard
d) Soft

7. Which of these give glazing to the earthenware

a) Quartz
b) borax
c) lead oxide
d) All the above

8. Plastics may be shaped into desired articles by

a) heat
b) Pressure
c) a and b
d) None

9. Which of these are inorganic adhesives

a) Glass
b) Ceramics
c) Sodium Silicate
d)All

10. The Cold cream are emulsion of

a) Oil and Water
b) Oil and Ghee
c) Oil and Lotion
d) Oil and Cellulose

11. Nail Polish is a cosmetic applied on nails for

a) Smoothness
b) Roughness
c) attractive
d) Cleaning

12. Silicate Present in powder is

a) Magnesium Silicate
b) Calcium Silicate
c) Aluminium Silicate
d) Barium Silicate

13. Chromophore

a) Soaks the fibre
b) Binds the dye to fibre
c) Impart colour to the fibre
d) Intensifies the colour of the dye

14. Natural sources of drugs are

a) Plants
b) Animals
c) Micro organisms
d) All the above

15. Drugs which act on blood circulation are

a) Harmones b) Vitamins c) Cardiovascular d) Antibodies

16. Petrol or Gasoline contains how many carbon atoms

a) 5 b) 9 c) 5 to 9 d) None

17. The liqufied petroleum gas (LPG) Contains

a) Propane b) Propene c) Butane d) All

18. Which of the following is a mixed fertilizer?

a) KCl b) NH_4Cl c) KNO_3 d) Nitrophosk

19. Chief Component of cooking gas is

a) Butane b) Ethane c) Methane d) Octane

20. Which of these are natural nutrient

a) Nitrogen b) Carbon c) Zinc d) Iron

21. In the following which one is not the single fertilizer

a) NH_4Cl b) NH_4NO_3 c) KCl d) KNO_3

22. The main constitutent in the natural fibre is

a) Glucose b) Cellulose c) Fructose d) Sucrose

23. Addition polymerization of vinyl chloride gives

a) Vinyl Chloride b) Polyvinyl Chloride c) Poly Ethylene d) Poly Ethane

24. Additional polymerization of ethylene gives

a) Vinyl Chloride b) Polyvinyl Chloride c) Poly ethylene d) Poly Ethange

25. Which is not the primary nutrient

a) Magnesium b) Nitrogen c) Phosphorous d) Potassium

26. Of these which is the secondary nutrient

a) Carbon b) Hydrogen c) Magnesium d) Potassium

27. Gasoline is

a) Kerosene b) Petrol c) Diesel Oil d) Petroleum

28. Tyrian purple dye can be obtained from

a) Madder Plant b) Snail c) Indigo Plant leaves d) Synthesis

29. Dyes having N = N as Chromophore

a) Azo dyes b) Quino dyes c) Nitro dyes d) Nitroso dyes

KEY

1) b	2) d	3) d	4) b	5) a	6) b	7) d
8) c	9) d	10) a	11) c	12) a	13) c	14) d
15) c	16) c	17) d	18) d	19) a	20) b	21) b
22) b	23) d	24) c	25) a	26) c	27) b	28) b
29) a						

Fill in the Blanks

1. Cement was invented by _____
2. In the cement manufacture lime stone provides _____
3. In the cement manufacture clay provides _____ and _____
4. Gray hard balls of cement is called _____
5. Glass may be considered glass is called _____
6. The process of cooling glass is called _____
7. Cullet is _____
8. _____ gives blue colour to the glass.
9. Ceramics are articles made from _____
10. The word ceramic is derived from Greek word _____
11. The polymeric organic substance is commonly known as _____ resin.
12. Milk Protein "casein" is used as _____
13. _____ is the main constituent in the natural fibres.
14. _____ are used as cosmetics for skin.
15. The cold cream is an _____ of oil and water.
16. _____ is the largest selling single item among the cosmetics.
17. The first synthetic dye was prepared by _____
18. Perkin violet dye, commonly known as _____
19. Mordnat is _____
20. Direct consumption of drug may be difficult to its _____
21. Petrol is _____ than water.
22. Cooking gas is also known as _____
23. Dyes which has NO2 chromophore is _____
24. Dyes which has NO chromophore is _____
25. In addition polymerization acrylonitride will becomes _____
26. Crude oil is a stable mixture of _____ and _____
27. In the fractionation of crude petroleum the residue cake called _____ asphalt.
28. Generally the heavy oils are used as _____
29. _____ soften on heating.
30. _____ is a hormone insulin
31. Chemicals derived from the fractions of petroleum are called _____
32. _____, _____ and _____ are natural nutrients.

KEY:

1) J. Aspdin
2) Calcium
3) Aluminium, Silica
4) Clinker Cement
5) Frozen
6) Annealing
7) Some broken Glass
8) $CuSO_4$
9) Clay
10) Keramos
11) Resin
12) Adhesive
13) Cellulose (Poly Glucose)
14) Cold Cream
15) Emulsion
16) Face Powder
17) William Henry Perkin
18) mamve
19) Metal ions
20) Unpleasant Taste
21) Lighter
22) Liquefied
23) Nitrodyes
24) Nitroso dyes
25) Poly acrylimitrile
26) Oil, Salt Water
27) asphalt
28) lubricating Oil
29) Thermoelastic
30) Insulin
31) Petro chemicals
32) Carbon, Hydrogen, Oxygen

Match the following

SET-1

Group A		Group B
1. Cr_2O_3	( )	a) Ruby
2. MnO_2	( )	b) Red
3. $AuCl_3$	( )	c) Green
4. $CuSO_4$	( )	d) Purple
5. Cu_2O	( )	e) Blue

SET-2

Group A		Group B
1. Natural nutrient	( )	a) Ammonium Chloride
2. Primary Nutrient	( )	b) Zinc
3. Secondary Nutrient	( )	c) Carbon
4. Micro Nutrient	( )	d) Nitrogen
5. Nitrogen Fertilizer	( )	e) Sodium

SET-3

Group A		Group B
1. Nitrodyes	( )	a) NO_2
2. Nitroso Dyes	( )	b) – OH
3. Azodyes	( )	c) C = O
4. Quinone Dyes	( )	d) NO
5. Auxochromes	( )	e) N = N

KEY

SET-1

1. c, 2. d, 3. a, 4. e, 5. b

SET-2

1. c, 2. d, 3. e, 4. b, 5. a

SET-3

1. a, 2. d, 3. c, 4. d, 5. b