CHEMISTRY

1.Petroleum is also known as ----------

Crude oil

2.Components of petroleum

Components	Number of carbon atoms present in the hydrocarbons	Uses
Uncondensed gases	$C_1 - C_4$	Domestic/Industrial fuel
Petrol	$C_5 - C_9$	Motor fuel
Kerosene	$C_{10} - C_{16}$	Domestic fuel
Diesel	$C_{16} - C_{18}$	Diesel engine fuel
Petroleum jelly (Vaseline), Grease	$C_{18} - C_{22}$	Lubricant, Manufacture of cosmetics
Paraffin wax	$C_{22} - C_{30}$	Manufacture of Wax, Boot polish, Wax paper, Tarpaulin etc.
Bitumen	Above C_{30}	Road tarring

3.The main component of LPG is ----------

Butane

4 Coal is formed as a result of ---------- on the remains of plants

Carbonisation

5.Different types

Type of Coal	Percentage of Carbon
Peat	57 % Carbon
Lignite	67 % Carbon
Bituminous Coal	83 % Carbon
Anthracite	94% Carbon

6.Different types of Medicines

Type	Function
Analgesics	To relieve pain
Antipyretics	To lower body temperature
Antacids	To reduce acidity
Antiseptics	To control micro organisms
Antibiotics	To destroy the disease causing micro organisms and prevent their growth

7.Cement is a complex mixture of ----------

Silicates and Aluminates of Calcium

8.What are the raw materials used for the manufacture of Cement ?

Clay, Lime stone, Gypsum

9.What is Cement clinker ?

Cement clinker is obtained when powdered lime stone and clay are heated in a rotary kiln.

10.Mixture of cement used for different purpose

Use	Mixture	Substances required
For plastering	Cement Mix	Cement , Water, Sand
For Concreting the roof	Reinforced concrete	Metal, Cement, Water, Iron/steel bars, sand
For setting the floor	Concrete	Metal, Cement, Water, Sand

11.Dyes and Pigments

Natural Dyes	Alizarin, Indigo
Substances used for preparing synthetic dyes	Benzene, Phenol, Aniline
Pigments	Lead chromate, Cadmium Sulphide

12.Different types of glasses and their uses

Glasses	Constituents	Uses
Soda-lime glass/Soda glass/Soft glass	Silicon dioxide (SiO_2) Sodium carbonate (Na_2CO_3) Calcium carbonate ($CaCO_3$)	Window panes Mirrors
Hard glass	Silicon dioxide (SiO_2) Potassium carbonate (K_2CO_3) Calcium carbonate ($CaCO_3$)	Laboratory equipments Factory equipments/ Kitchen utensils
Borosilicate glass	Boron oxide (B_2O_3) Aluminium oxide (Al_2O_3) Silicon dioxide (SiO_2)	Laboratory equipments Cookware
Flint glass/Optical glass/ Lead glass	Silicon dioxide (SiO_2) Potassium carbonate (K_2CO_3) Lead oxide (PbO)	Lenses, Prisms

13.Glass is a mixture of ----------

Silicates

14.Substances using to impart colour to different glasses

- Ferric ion → Yellow
- Chromium/Ferrous ion → Green
- Cobalt oxide → Blue
- Manganese dioxide → Purple

15.<u>Goals of Green Chemistry</u>

- to convert hazardous chemicals into useful and harmless substances.
- to produce eco - friendly products.
- to reduce pollution.
- to minimise the use of poisonous products.

16.For what purpose gypsum is added during the manufacture of cement?

To change the setting time

17What is setting of cement ?

When mixed with water cement changes into a hardened mass. This is known as setting of cement

18.Workers wearing gloves and pantaloons while concreting buildings .Why?

Setting of cement is an Exothermic reaction, a large amount of heat is liberated. To avoid burns ,workers wear gloves and pantaloons

19.Give examples of petrochemicals ?

Paints, plastics, Ointment, Creams

20.Ores of some metals

Metal	Ore	Chemical formula
Aluminium	Bauxite	$Al_2O_3.2H_2O$
Iron	Haematite, Magnetite	Fe_2O_3 Fe_3O_4
Copper	Copper pyrites Cuprite	$CuFeS_2$ Cu_2O
Zinc	Zinc blende, Calamine	ZnS $ZnCO_3$

21.The impurities present in ores are called ----------

Gangue

22.The removal of impurities from the ore is called ----------

concentration of the ore

23.Methods of concentration

Nature of impurity	Nature of ore	Method of concentration	Examples
High density	Low density	Froth floatation	Sulphide ores eg:Copper pyrites
Low density	High density	Levigation/Hydraulic washing	Oxide ores, Ores of gold
Non magnetic impurities	Magnetic ore	Magnetic separation	Magnetite(ore of iron)
Magnetic impurities	Non magnetic ore	Magnetic separation	Removal of iron tungstate from tinstone
Impurities not soluble	Ore is soluble	Leaching	Bauxite (ore of Aluminium)

24.The process of extraction of metal from its oxide is ----------

Reduction

25.Different reducing agents

Metals	Reducing agents
Highly reactive metals like Sodium,Potassium, Calcium,Aluminium	Electricity
Zinc	Carbon
Iron	Carbon Monoxide

26.Purification of metals

Property of metal	Method of refining	Examples of metals
Low melting point	Liquation	Tin, Lead
Low boiling point	Distillation	Zinc, Cadmium, Mercury
----------	Electrolytic refining	Copper, Silver

27. Iron is industrially manufactured from ----------

Haematite

28.The process of extraction of iron is done in ---------- furnace

Blast furnace

29.What are the substance that are fed into the blast furnace from the top?

Roasted Haematite, Coke, and lime stone

30.The main impurity present in Haematite is ----------

Silicon dioxide

31.The substances used to remove impurities that are difficult to separate from the ore are called ----------

flux

32.Gangue + Flux = ----------

Slag

33.The iron obtained from blast furnace is called ----------

pig iron

34.Purest form of iron is ----------

Wrought iron

35.The iron which breaks on bending is ----------

Cast iron

36.Different types of steel

Alloy steels	Components	Properties	Uses
Stainless steel	Fe, Cr, Ni, C	Strong	For the manufacture of utensils, parts of vehicles
Alnico	Fe, Ni, Al, Co	Magnetic in nature	For the manufacture of permanent magnets
Nichrome	Fe, Ni, Cr, C	High resistance	For making heating coils

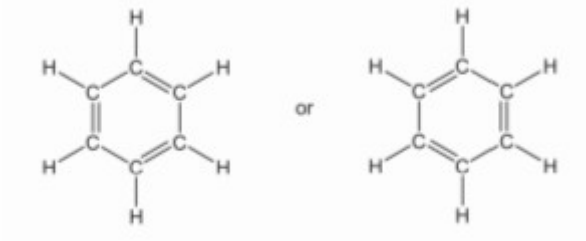
37.Different types of ethanol

Concentration of ethanol	Name of ethanol
8 -10% ethanol	Wash
95.6 % ethanol	Rectified spirit
99.5% ethanol	Absolute alcohol
99.5% ethanol + Petrol	Power alcohol
Alcohol made unfit for drinking by adding poisonous substances	Denatured alcohol

38.The process of production of Aluminium from Bauxite is known as ----------

Hall-Heroult process

39.The structure of Benzene is ----------



40.The molecular formula of Benzene is ----------

C_6H_6

41.Give examples of positive catalysts

Manganese dioxide in the decomposition of hydrogen peroxide

Iron in the manufacture of ammonia

Vanadium pentoxide in the manufacture of sulphuric acid

42.The Group 1 elements are also known as ----------

Alkali metals

43.The group 2 elements are also known as ----------

Alkaline earth metals

44. Give example of negative catalyst?

Phosphoric acid in the decomposition of Hydrogen peroxide

45.d-block elements are also known as ----------

Transition elements

46.Group 18 elements are also known as -------

Noble gases

47.Lanthanoids and Actinoids belongs to ------- block

f-block

48.Properties of d- block elements :

They form coloured compounds

They show variable oxidation states

49.Avogadro number is ----------

$6.022*10^{23}$

50.One mole of any substance contains ---------- particles in it

$6.022*10^{23}$

51.The volume of one mole of gas at STP is ----------

22.4 litre

52.What is the gas formed when metals react with water?

Hydrogen

53. What is the gas formed when metals react with acids ?

Hydrogen

54.The energy conversion in Galvanic or voltaic cell is ---------

Chemical energy -----> E;ectrical energy

55.The energy conversion in electrolytic cell is -------

Electrical energy ---------> Chemical energy

56.The electrode at which oxidation occurs is the ----------

Anode

57.The electrode at which reduction occurs is the ----------

Cathode

58.Most of the ---------- are radioactive and artificial elements

Actinoids

59.Graph of reversible reaction at equilibrium