8th Science Lesson 20 Questions in English

20] Chemistry In Everyday Life

1. Our human body is made of which among the following element?

a) Oxygen
b) Sulphur
c) Magnesium
d) All the above

Explanation

Chemistry is in the air we breathe, the food we eat and everything we use in our daily life. We are nothing without chemistry even our body is made of elements like nitrogen, phosphorous, hydrogen, oxygen, calcium, potassium, sulphur, magnesium etc.

2. Which among the following chemical compounds make up the fossil fuels petroleum and natural gas?

a) Nitrogen peroxide
b) Hydrocarbon
c) Helium chloride
d) Hydrogen peroxide

Explanation

Our whole life is dependent on various chemical compounds. Among them, hydrocarbons are the most important one. We can say that the whole civilization is driven by hydrocarbons because they make up the fossil fuels petroleum and natural gas.

3. In which among the following fuel hydrocarbon is not present?

a) Crude oil
b) Uranium
c) Natural gas
d) Coal

Explanation

Hydrocarbons occur naturally and they are found in fossil fuels like crude oil, natural gas and coal. Hydrocarbons are the organic compounds consisting of hydrogen and carbon atoms. They are combustible and produce large amount of heat energy along with carbon dioxide and water vapour, on burning.

4. Which among the following statement is correct

1) About 300 million years ago plants and animals died and they were buried on the ocean floor. Overtime they were covered by silt and soil layers. Then they were buried deep inside the earth and compressed through temperature and pressure and converted to fossil fuels like oil and natural gas.
2) These fuels are found in porous rocks which lie below large bodies of water, especially oceans. By drilling these rocks hydrocarbons can be extracted. Hydrocarbons are present in different trees and plants also.
    a) Only 1
    b) Only 2
    c) Both 1 and 2
    d) None

5. Which among the following is not the property of Hydrocarbons?

a) Most of the hydrocarbons are soluble in water.
b) Hydrocarbons are less dense than water. So, they float on top of water.
c) Hydrocarbons can be gases (e.g., methane and propane), liquids (e.g., hexane and benzene) or waxes (paraffin).
d) Hydrocarbons are capable of making bonds with one another. This property is known as catenation. Due to this property, they form a greater number of complex molecules.

Explanation

Most of the hydrocarbons are insoluble in water.

6. Most hydrocarbons react with which element to produce carbon dioxide and water?

a) Helium
b) Oxygen
c) Nitrogen
d) Xenon

Explanation

Most hydrocarbons react with oxygen to produce carbon dioxide and water.

7. How many general classes of hydrocarbons are there?

a) Two
b) Three
c) Four
d) Six

Explanation

In hydrocarbons carbon and hydrogen atoms are linked together through different chemical bonds. Depending on the bond between these atoms there are number of hydrocarbons. The four general classes of hydrocarbons are: alkanes, alkenes, alkynes and arenes.

8. Which among the following is not the Hydrocarbon?

a) Propane
b) Butane
c) Asikane
d) Pentane

Explanation

Some of the common hydrocarbons are methane, ethane, butane, pentane and propane

9. Which is the simplest hydrocarbon in which four hydrogen atoms are linked with one carbon atom?

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

Explanation

Methane is the simplest hydrocarbon in which four hydrogen atoms are linked with one carbon atom.

10. Match the following Hydrocarbons with its formula?

i. Ethane – 1. C_5H_{12}
ii. Butane – 2. C_2H_6
iii. Pentane – 3. C_3H_6
iv. Propane – 4. C_4H_{10}

a) 3 – 1 – 4 – 2
b) 4 – 1 – 3 – 2
c) 2 – 4 – 1 – 3
d) 4 – 2 – 1 – 3

Explanation

Methane – CH_4; Ethane – C_2H_6; Propane – C_3H_8; Butane – C_4H_{10}; Pentane – C_5H_{12}.

11. Which among the following is incorrect regarding Methane?

a) Methane is a colourless
b) Methane is odourless

c) Methane is inflammable gas
d) Methane produces harmful product not eco friendly

Explanation

Methane is the simplest hydrocarbon in which four hydrogen atoms are linked with one carbon atom. It is a colourless, odourless and inflammable gas. It is an eco-friendly fuel because it does not produce any harmful products. It is used as a fuel in electricity generation.

12. Methane is also known as _____

a) Cramp gas
b) Marsh gas
c) Crater gas
d) Gill gas

Explanation

Methane is also known as marsh gas as it is present in marshes. Dead and decaying plants and animals release methane gas. It is a renewable source of energy.

13. Sewage sludge can also be decomposed by microorganisms to produce methane gas along with impurities like _____

a) Carbon dioxide and hydrogen sulphide
b) Nitrogen dioxide and hydrogen peroxide
c) Chloro fluoro and hydrogen peroxide
d) Carbon dioxide and nitrogen sulphide

Explanation

Sewage sludge can also be decomposed by microorganisms to produce methane gas along with impurities like carbon dioxide and hydrogen sulphide. After removing these impurities, methane gas can be used as an efficient fuel.

14. Which is liquefied through pressurisation and commonly used as LPG (Liquefied Petroleum Gas) along with butane?

a) Methane
b) Propane
c) Ethane
d) Pentane

Explanation

Propane is liquefied through pressurisation and commonly used as LPG (Liquefied Petroleum Gas) along with butane.

15. Which among the following is incorrect about propane?

a) Propane is an odourless gas
b) Propane is highly inflammable gas
c) Propane is lighter than air
d) Propane can also be used as refrigerants.

Explanation

Propane is heavier than air. Propane is used as fuel in heating, cooking, and vehicles.

16. Which is mixed with LPG to help in detection of any leakage of LPG?

a) Parabens
b) Mercaptan
c) Liposome
d) Cyanoacrylate

Explanation

Propane is used in LPG cylinders. Since it is an odourless gas, any leakage cannot be detected. Hence, a chemical by name Mercaptan is mixed with LPG to help in detection of any leakage of LPG.

17. Which is used as a fuel gas and propellant in aerosol sprays such as deodorants?

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

Explanation

Butane is used as a fuel gas and propellant in aerosol sprays such as deodorants.

18. Which among the following statement is incorrect regarding Butane?

a) Butane is liquid at room temperature and atmospheric pressure
b) Butane is also used as lighter fuel for a common lighter or butane torch
c) Pure forms of butane can be used as refrigerants
d) None of the above

Explanation

Butane is a gas at room temperature and atmospheric pressure. They are highly flammable, colorless gases that quickly vaporize at room temperature.

19. Which among the following are liquids with low boiling point and are used as fuels and solvents in the laboratory?

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

Explanation

Pentanes are liquids with low boiling point. They are used as fuels and solvents in the laboratory. They are also used to produce polystyrene.

20. Natural gas is a naturally occurring hydrocarbon gas mixture consisting of which among the following gases?

a) Methane
b) Nitrogen
c) Carbon dioxide
d) All the above

Explanation

Natural gas is a naturally occurring hydrocarbon gas mixture consisting primarily of methane along with other higher alkanes and a small percentage of carbon dioxide, nitrogen and hydrogen sulphide (H_2S).

21. If the natural gas contains lower hydrocarbons like methane and ethane, it is called ____

a) Dry air
b) Wet air
c) Cool air
d) Warm air

Explanation

If the natural gas contains lower hydrocarbons like methane and ethane, it is called dry gas.

22. Natural gas is always found above the oil in the oil wells. This gas is trapped inside the small spaces in underground rocks called ____

a) Contamination
b) Eco zone
c) Reservoir
d) Slopier

Explanation

Natural gas is always found above the oil in the oil wells. This gas is trapped inside the small spaces in underground rocks called reservoirs.

23. Natural gas can also be found in reservoirs with oil and is extracted along with oil. This is called _____

a) Supportive gas
b) Associated gas
c) Benevolent gas
d) Slit gas

Explanation

Conventional natural gas can be extracted through drilling wells. Natural gas can also be found in reservoirs with oil and is extracted along with oil. This is called associated gas.

24. In which among the following state natural gas doesn't occur?

a) Tripura
b) Rajasthan
c) Tamil Nadu
d) Punjab

Explanation

Natural gas is a fossil fuel used as a source of energy for heating, cooking and electricity generation. Natural gas occurs in Tripura, Rajasthan, Maharashtra, Andhra Pradesh and Tamil Nadu.

25. In which among the following region of Tamil Nadu natural gas occur?

a) Krishna basin
b) Godavari basin
c) Kaveri delta
d) All the above

Explanation

The natural gas occurs in Andhra Pradesh (Krishna, Godavari Basins) and Tamil Nadu (Kaveri Delta).

26. Natural gas formed by the decomposition of organic matter in marshy areas and waste sewages contains mainly what?

a) Propane
b) Pentane
c) Ethane
d) Methane

Explanation

Natural gas is also formed by the decomposition of organic matter in marshy areas and waste sewages. The natural gas formed by this way contains mainly methane.

27. Which among the following statement is incorrect regarding natural gas?

a) Natural gas is used as an industrial and domestic fuel. It is used in thermal power stations.
b) Natural gas is used as fuel in vehicles as an alternative for petrol and diesel
c) When cooled natural gas decomposes and forms hydrogen and carbon. Hydrogen thus formed is used in the manufacture of pesticides.
d) Natural gas is used to manufacture chemicals, fabrics, glass, steel, plastics and paints. • It is also used in electricity generation.

Explanation

When heated natural gas decomposes and forms hydrogen and carbon. Hydrogen thus formed is used in the manufacture of fertilizers.

28. What is the primary hydrocarbon present in Compressed Natural Gas (CNG)?

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

Explanation

When the natural gas is compressed at high pressure, it is called Compressed Natural Gas (CNG). Nowadays it is used as fuel in automobiles. The primary hydrocarbon present in CNG is methane (88.5%).

29. Which among the following is incorrect regarding natural gas?

a) Natural gas produces lot of heat as it is easily burnt and does not leave any residue
b) Natural gas burn with enormous smoke and so causes pollution and can be easily supplied through pipes.
c) Natural gas can be directly used as fuel in homes and industries
d) Moderate temperature and humidity are needed to keep paintings and other ancient artifacts from being destroyed by environmental factors. Thus, natural gas is used in museums to protect the monuments.

Explanation

Natural gas burns without smoke and so causes no pollution and can be easily supplied through pipes.

30. Natural gas is liquefied for shipping in large tankers. This is called _____

a) Liquid fuel gas
b) Liquid hydrogen gas
c) Liquid nitrogen gas
d) Liquid carbon gas

Explanation

Natural gas is liquefied for shipping in large tankers. This is called Liquefied Nitrogen Gas (LNG). CNG is stored at high pressure whereas LNG is stored in ultra-cold liquid form.

31. Which among the following property of CNG is incorrect?

a) CNG is the cheapest and cleanest fuel
b) Vehicles using this gas produce less carbon dioxide and hydrocarbon emission
c) CNG is more expensive than petrol and diesel
d) None of the above

Explanation

CNG is less expensive than petrol and diesel.

32. Which among the following is not the fuel gas?

a) Producer gas
b) Atomic gas
c) Coal gas
d) Water gas

Explanation

Apart from natural gas, there are some other gases used as fuel. Producer gas, coal gas, bio gas and water gas are some of them.

33. Which among the following is a gaseous mixture of carbon monoxide and hydrogen?

a) Producer gas
b) Coal gas
c) Water gas
d) Bio gas

Explanation

Water gas is a gaseous mixture of carbon monoxide and hydrogen. It is made by passing steam over incandescent coke at a temperature of 1000°C.

$C_{(g)} + H_2O_{(g)} \rightarrow CO_{(g)} + H_{2\,(g)}$

34. Which among the following is a gaseous mixture of carbon monoxide and nitrogen?

a) **Producer gas**
b) Coal gas
c) Water gas
d) Bio gas

Explanation

Producer gas is a gaseous mixture of carbon monoxide and nitrogen. It is produced by passing air mixed with steam, over red-hot coke at a temperature of 1100 ˚C.

35. Which among the following is not the other name of producer gas?

a) **Synthesis gas**
b) Wood gas
c) Suction gas
d) None of the above

Explanation

Producer gas is known by different names in different countries. It is referred as Wood gas in USA and as Suction gas in UK.

36. Which among the following statement is incorrect regarding coal gas?

1) Coal gas is a mixture of gases like hydrogen, methane and carbon monoxide obtained by the destructive distillation of coal. It is also used as a reducing agent in certain metallurgical operations.
2) Heating coal in the presence of air is called destructive distillation. It is used in heating open hearth furnace in the manufacture of steel.
    a) Only 1
    b) Only 2
    c) Both 1 and 2
    d) None

Explanation

Heating coal in the absence of air is called destructive distillation. It is used in heating open hearth furnace in the manufacture of steel.

37. Which fuel gas is used as an industrial fuel for iron and steel manufacturing.?

a) **Producer gas**
b) Coal gas
c) Bio gas

d) Water gas

Explanation

Producer gas is used as an industrial fuel for iron and steel manufacturing.

38. Which fuel gas is a mixture of methane and carbon dioxide?

a) Producer gas
b) Coal gas
c) Bio gas
d) Water gas

Explanation

Bio-gas is a mixture of methane and carbon dioxide. It is produced by the decomposition of plant and animal waste which form the organic matter. The breaking down of organic matter in anaerobic condition (i.e., in the absence of oxygen) leads to the formation of biogas. It is an example for renewable source of energy.

39. Water gas is also called as _____

a) Syngas
b) Seringas
c) Belugas
d) Outgas

Explanation

Water gas is also called as syngas or synthesis gas as it is used to synthesize methanol and simple hydrocarbons. It is used as an industrial fuel also.

40. Which is one of the fossil fuels and is a mixture of free carbon and compounds of carbon containing hydrogen, oxygen, nitrogen and sulphur?

a) Coal
b) Natural gas
c) Oil gas
d) Petroleum

Explanation

Coal is one of the fossil fuels. It is a mixture of free carbon and compounds of carbon containing hydrogen, oxygen, nitrogen and sulphur.

41. Three hundred million years ago, some plants grew into giant ferns and mosses and got buried into the bottom of the soil as they slowly started to decompose and formed a dense, sponge like material called ____

a) Lite
b) Peat
c) Rime
d) Seri

Explanation

Three hundred million years ago, some plants grew into giant ferns and mosses. These plants got buried into the bottom of the soil. They slowly started to decompose and formed a dense, sponge like material called peat. Over time peat was compressed due to high temperature and pressure and coal was formed.

42. The slow process of conversion of dead vegetation into coal is called ____

a) Extraction
b) Materialization
c) Carbonization
d) All the above

Explanation

As coal contains mainly carbon, the slow process of conversion of dead vegetation into coal is called carbonization.

43. Depending on the depth of the coal bed, coal is extracted in how many ways?

a) Two
b) Three
c) Five
d) Six

Explanation

Coal is extracted from the coal beds found below the surface of the earth. Coal found inside the earth is broken into pieces by explosives and brought above. Depending on the depth of the coal bed, coal is extracted in two ways. 1. Surface mining and 2. Underground mining.

44. Which among the following statement is correct

1) If the coal beds lie within 22 feet of the earth's surface, the top soil is removed and coal is dug out. This is called surface mining

2) In some places, coal beds are found very deep inside the earth. In that case underground tunnels are made to get this coal. This is called underground mining or deep mining
    a) Only 1
    b) Only 2
    c) Both 1 and 2
    d) None

45. Which among the following country is the international leader in coal reserves, with nearly 30% of the world's supply?

a) United state
b) Russian
c) China
d) India

Explanation

Coal reserves can be found in about 70 countries worldwide. The largest coal reserves are available in United State, Russian, China, Australia and India. The US is the international leader in coal reserves, with nearly 30% of the world's supply.

46. In which year coal mining was started in India?

a) 1689
b) 1774
c) 1818
d) 1890

Explanation

Coal mining was started in India in 1774.

47. What is the rank of India among the coal producing countries in the world?

a) Two
b) Third
c) Fourth
d) Sixth

Explanation

India now ranks third among the coal producing countries in the world. USA and China have two third of the world's coal reserve.

48. Which among the following is not the is types of coal?

a) Lignite

b) Bituminous
c) Anthracite
d) Pyromorphite

Explanation

Coal is classified into four main categories based on the amounts of carbon it contains and the heat energy it can produce. They are lignite, sub bituminous, bituminous and anthracite.

49. Among the four types of coal which is the most desirable one due to its high heat content?

a) Lignite
b) Bituminous
c) Sub Bituminous
d) Anthracites

Explanation

Among these four types anthracite is the most desirable one due to its high heat content.

50. Which among the following is formed when lignite becomes darker and harder over time become black and dull coal?

a) Lignite
b) Bituminous
c) Sub Bituminous
d) Anthracites

Explanation

When lignite becomes darker and harder over time sub-bituminous coal is formed. Sub bituminous coal is a black and dull coal.

51. Which is a brown coloured coal of lowest grade and has least content of carbon?

a) Lignite
b) Bituminous
c) Sub Bituminous
d) Anthracites

Explanation

Lignite is a brown coloured coal of lowest grade. It has least content of carbon.

52. Which is the highest-grade coal, which is hard and dark black in colour?

a) Lignite
b) Bituminous

c) Sub Bituminous
d) Anthracites

Explanation

Anthracite is the highest-grade coal. It is hard and dark black in colour. It has a very light weight and the highest heat content.

53. Which among the following statement is correct

1) The carbon content of lignite is 25 – 35%. Lignite contains a high amount of water and makes up almost half of our total coal reserves. It is used for electricity generation.
2) Bituminous has higher heating value than lignite and contains 35-44% carbon. It is used primarily as fuel for electricity power generation.
3) Sub Bituminous contains 45-86% carbon. It has high heating value. It is used to generate electricity. Sub Bituminous coal is dark and hard.
    a) Only 1
    b) Only 3
    c) Both 2 and 3
    d) Both 1 and 3

Explanation

Sub Bituminous has higher heating value than lignite and contains 35-44% carbon. It is used primarily as fuel for electricity power generation.

Bituminous contains 45-86% carbon. It has high heating value. It is used to generate electricity. With more chemical and physical changes, sub-bituminous coal is developed into bituminous coal. Bituminous coal is dark and hard.

54. Which among the following statement is incorrect

a) Lignite is used for generating synthetic natural gas and producing fertilizer products.
b) Sub Bituminous has lower sulphur content than other types and burns cleaner.
c) Bituminous is used to provide coke to iron and steel industries.
d) Anthracite by-product can be converted into different chemicals which are used to make paint, nylon, and many other items.

Explanation

Bituminous by-product can be converted into different chemicals which are used to make paint, nylon, and many other items.

55. What is the colour of Anthracite coal?

a) Deep red

b) Deep blue
c) Deep black
d) Deep grey

Explanation

Anthracite coal is very hard, deep black and shiny. It contains 86-97% carbon and has a heating value slightly higher than bituminous coal. It burns longer with more heat and less dust.

56. Which among the following used of coal is incorrect

a) Coal is used to make derivatives of phosphate which are used to make lubricants, water repellents, resins, cosmetics, hair shampoos, and toothpaste.
b) Carbon fibre which is an extremely strong but lightweight material is used in construction, mountain bikes, and tennis rackets.
c) Activated carbon, used in filters for water and air purification and in kidney dialysis machines is obtained from coal.
d) Activated charcoal is used to make face packs and cosmetics. Coal is used to make paper. Coal helps to create alumina refineries. Coal is used to generate heat and electricity.

Explanation

Coal is used to make derivatives of silicon which are used to make lubricants, water repellents, resins, cosmetics, hair shampoos, and toothpaste.

57. Coal when heated in the absence of air does not burn but produces many by-products. This process of heating coal in the absence of air is called _____

a) Destructive distillation of coal
b) Constructive distillation of coal
c) Concentration distillation of coal
d) Segregate distillation of coal

Explanation

Coal when heated in the absence of air does not burn but produces many by-products. This process of heating coal in the absence of air is called destructive distillation of coal. Thousands of different products have coal or coal by-products as their components. Some of them are soap, aspirins, solvents, dyes, plastics, and fibres, such as rayon and nylon

58. Which among the following is not the main by-products obtained during destructive distillation?

a) Coke
b) Fluorine
c) Tar

d) Ammonia

Explanation

The main by-products obtained during destructive distillation are coke, coal tar, ammonia and coal gas.

59. Which among the following statement is wrong regarding Fractional Distillation method?

1) The destructive distillation of coal can be carried out in the laboratories. Finely powdered coal is taken in a test tube and heated. At a particular temperature coal breaks down to produce coke, coal tar, ammonia and coal gas.
2) Coal tar is deposited at the bottom of the second test tube and coal gas escapes out through the side tube. The ammonia produced is absorbed in the water, forming ammonium hydroxide. Finally, a black residue called coke is left in the first tube.
    a) Only 1
    b) Only 2
    c) Both 1 and 2
    d) None

Explanation

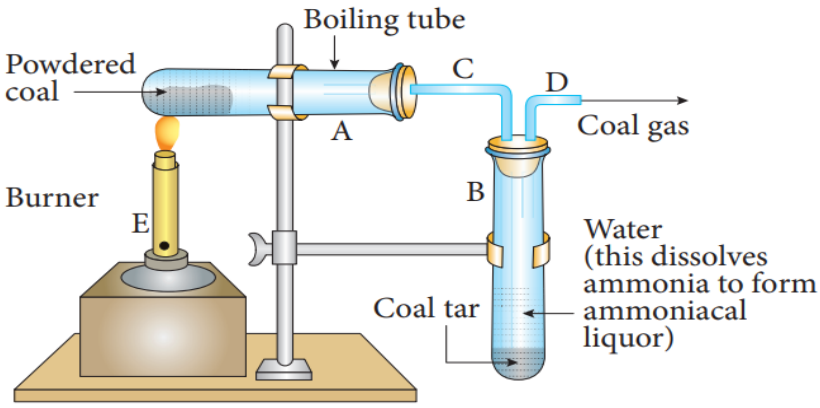

Figure 6.13 Fractional Distillation

60. Coke contain how many percentages of carbon?

a) 71%
b) 78%
c) 83%
d) 98%

Explanation

Coke contains 98% carbon. It is porous, black and the purest form of coal.

61. Which among the following is incorrect regarding coal?

a) Coal is a good fuel and burns without smoke
b) Coal is largely used as oxidising agent in the separation of metals from their ores
c) Coal is also used in making fuel gases like producer gas and water gas which is a mixture of carbon monoxide and hydrogen
d) None of the above

Explanation

Coal is largely used as a reducing agent in the extraction of metals from their ores.

62. Which is a mixture of different carbon compounds, which is a thick, black liquid with unpleasant smell?

a) Coke
b) Coal tar
c) Ammonia
d) Coal gas

Explanation

Coal tar is a mixture of different carbon compounds. It is a thick, black liquid with unpleasant smell.

63. Which product obtained from coal tar is used to repel moth and other insects.?

a) Xylene balls
b) Naphthalene balls
c) Styrene balls
d) Hexane balls

Explanation

Another product obtained from coal tar is naphthalene balls which are used to repel moth and other insects.

64. Coal gas also known as _____

a) Cream gas
b) Town gas
c) Ship gas
d) Diamond gas

Explanation

Coal gas also known as town gas. The gases present in coal gas are combustible and hence, it is an excellent fuel. It has high calorific value.

65. Coal gas is mainly a mixture of which among the following gas?

a) Hydrogen
b) Methane
c) Carbon dioxide
d) All the above

Explanation

Coal gas is mainly a mixture of gases like hydrogen, methane and carbon monoxide.

66. Which among the following product of coal is used for making fertilizers?

a) Coke
b) Coal tar
c) Ammonia
d) Coal gas

Explanation

The other by product obtained from coal is ammonia. It is used for making fertilizers such as ammonium sulphate, ammonium superphosphate etc.

67. Coal owing to its precious nature also known as _____

a) Red diamond
b) Brown diamond
c) Blue diamond
d) Black diamond

Explanation

It is also known as Black Diamond owing to its precious nature. On destructive distillation, 1000 kg of coal gives 700 kg of coke, 100 litres of ammonia, 50 litres of coal tar and 400 m3 of coal gas.

68. Petroleum occur in which form in Earth?

a) Liquid
b) Gaseous
c) Soil
d) All the above

Explanation

Petroleum is a fossil fuel formed from the remains of ancient marine organisms through death and decay. Petroleum is a complex mixture of hydrocarbons that occur in Earth in liquid, gaseous, or solid form.

69. In which among the following country first oil well in the world was drilled?

a) Russia
b) USA
c) Iran
d) India

Explanation

The first oil well in the world was drilled in Pennsylvania, USA in 1859.

70. The solid form of petroleum is known as _____

a) Wrythen
b) Naproxen
c) Armozeen
d) Bitumen

Explanation

The term petroleum commonly denotes the liquid form, crude oil. But technically petroleum also includes natural gas and bitumen, a solid form. The natural gas and the crude oil constitute the primary fossil fuels.

71. In which among the following state in India petroleum is not found?

a) Assam
b) Kerala
c) Tamil Nadu
d) Gujarat

Explanation

In India, petroleum is found in Assam, Gujarat, Maharashtra (Mumbai), Andhra Pradesh (Godavari and Krishna basin) and Tamil Nadu (Kaveri Basins). By drilling through the earth, the crude oil is pumped out from the well as a black liquid.

72. Where the second oil well in world was drilled in 1867?

a) Russia
b) China
c) India
d) Japan

Explanation

The second oil well in world was drilled in Makum, Assam, India in 1867.

73. Which among the following is not the gaseous impure found in crude petroleum obtained from the well is a dark coloured viscous liquid?

a) Methane
b) Ethane
c) Benzene
d) None of the above

Explanation

The crude petroleum obtained from the well is a dark coloured viscous liquid which contains many impurities such as water, solid particles and gases like methane and ethane. To make it useful for different purposes, it must be separated into various components.

74. The process of separating petroleum into useful by-products and removal of undesirable impurities is called ____

a) Sedimentation
b) Coagulation
c) Refining
d) Petition

Explanation

The process of separating petroleum into useful by-products and removal of undesirable impurities is called refining. The crude oil obtained from the oil wells will have salt water mixed with it. As the first step the water is removed from the crude oil.

75. The process of heating a mixture of liquids having different boiling points and then separating them by cooling is called ____

a) Coagulation distillation
b) Fractional distillation
c) Rational distillation
d) Concentrative distillation

Explanation

The process of separation of various constituents or fractions of petroleum is done by fractional distillation in fractionating columns. The process of heating a mixture of liquids having different boiling points and then separating them by cooling is called fractional distillation

76. Which among the following is the harmful impurity present in crude oil?

a) Sulphur
b) Phosphate

c) Florine
d) All the above

Explanation

The crude oil will have harmful sulphur compounds as impurities. By fractional distillation these impurities are removed. Petroleum is a mixture of various constituents such as petroleum gas, petrol, diesel, kerosene, lubricating oil, paraffin wax, etc.

77. Which among the following statement is correct regarding fraction distillation?

1) Crude petroleum is first heated to about 400°C in a furnace. As the vapours of crude oil move up the tower, the various fractions condense according to their boiling point ranges. The various fractions of petroleum obtained are tabulated below.
2) Many useful substances are obtained from petroleum and natural gas. These are termed 'heat-chemicals. These are used in the manufacture of detergents, fibres, and other man-made plastics like polythene. Ammonia gas obtained from natural gas, is used in the production of fertilizers.
    a) Only 1
    b) Only 2
    c) Both 1 and 2
    d) None

Explanation

Many useful substances are obtained from petroleum and natural gas. These are termed 'petrochemicals. These are used in the manufacture of detergents, fibres, and other man-made plastics like polythene. Hydrogen gas obtained from natural gas, is used in the production of fertilizers.

78. Due to its great commercial importance, petroleum is also called ____

a) Black diamond
b) Black gold
c) Black silver
d) Black ruby

Explanation

Due to its great commercial importance, petroleum is also called 'black gold'.

79. Which among the following uses of petroleum is incorrect?

a) Ancient cultures used crude oil for binding materials. It was also used as a sealant for waterproofing various surfaces.
b) Liquefied Petroleum Gas or LPG is used in houses as well as in the industry.

c) Diesel and petrol are used as fuels for vehicles. It is also used to run electric generators.
d) Paraffin is used as a solvent for dry cleaning.

Explanation

Petrol is used as a solvent for dry cleaning.

80. Any substance that can produce heat and energy on burning is called _____

a) Mass
b) Fuel
c) Matter
d) Trap

Explanation

Any substance that can produce heat and energy on burning is called fuel. We use this heat for various purposes such as cooking, heating and many industrial and manufacturing purposes. Some of the fuels that we use in our daily life are wood, coal, petrol, diesel and natural gas.

81. Fuels are classified into how many types according to their physical state?

a) Two
b) Three
c) Four
d) Five

Explanation

Fuels are classified into different types according to their physical state. They are classified into solid, liquid and gaseous fuels.

82. Which among the following Uses of Petroleum is incorrect?

a) Kerosene is used as a fuel for stoves and also in jet planes.
b) Lubricating oil reduces wear and tear and corrosion of machines.
c) Paraffin wax is used to make candles, ointments, ink, crayons, etc
d) Ether is mainly used to surface roads.

Explanation

Bitumen or asphalt is mainly used to surface roads.

83. Which among the following statement is correct

1) Fuels like wood and coal are in solid state and they are called solid fuels. This type of fuel was the last one to be used by man. These fuels are easy to store and transport. The production cost is high.

2) Most of the liquid fuels are derived from the fossil remains of dead plants and animals' petroleum oil, coal tar and alcohol are some of the liquid fuels. These fuels give more energy on burning and burn without ash.
3) Coal gas, oil gas, producer gas and hydrogen are some of the gaseous fuels. Th ese fuels can be easily transported through pipes and they do not produce pollution.
    a) Both 1 and 2
    b) Both 1 and 3
    c) Both 2 and 3
    d) All 1, 2 and 3

Explanation

Fuels like wood and coal are in solid state and they are called solid fuels. Th is type of fuel was the first one to be used by man. Th ese fuels are easy to store and transport. Th e production cost is also very low.

84. Which among the following characteristics of fuel is incorrect?

a) Fuel should be readily available and should be easily transportable
b) Fuel should be less expensive and should have high calorific value
c) Fuel should produce large amount of heat and should not leave behind any undesirable substances
d) None of the above

85. Any fuel contains what as its main constituent?

a) Nitrogen
b) Hydrogen
c) Carbon
d) Argon

Explanation

Any fuel contains carbon as its main constituent. During the combustion of fuel carbon combines with oxygen and liberates large amount of heat. It is expected that a fuel liberates maximum amount of heat in the short time.

86. Which is the quantity of heat produced by the complete combustion of fuel at constant pressure and normal conditions?

a) Specific energy
b) Calorific value
c) Capacity value
d) Cetane energy

Explanation

Calorific Value is the quantity of heat produced by the complete combustion of fuel at constant pressure and normal conditions. It is measured in terms of $125kg^{-1}$.

87. Which is the amount of energy produced by unit mass of a fuel?

a) **Specific energy**
b) Calorific value
c) Capacity value
d) Cetane energy

Explanation

Specific energy is the amount of energy produced by unit mass of a fuel. It is defined as the energy per unit mass. It is used to measure the stored energy in certain substances.

88. What is the unit of specific energy?

a) Kg^{-1}
b) $J^{-1}kg$
c) J Kg
d) **JKg^{-1}**

Explanation

The unit of Specific energy is Jkg^{-1}.

89. Which among the following statement is incorrect

1) Octane number denotes the amount of octane present in petrol. The fuel having high octane number is called as an ideal fuel.
2) Cetane Number measures the ignition delay of the fuel in petrol engine. When cetane number is lower the ignition, delay is shorter. The fuel with high cetane number is called as the cruel fuel.
    a) Only 1
    b) **Only 2**
    c) Both 1 and 2
    d) None

Explanation

Cetane Number measures the ignition delay of the fuel in diesel engine. When cetane number is higher the ignition delay is shorter. The fuel with high cetane number is called as the ideal fuel.

90. Which among the following points regarding octane number is incorrect?

a) Octane rating is used for petrol
b) It measures the amount of octane present in petrol

c) Octane number of petrol can be increased by adding benzene or toluene
d) The fuel with high octane number has high cetane number

Explanation

The fuel with high octane number has low cetane number.

91. Which among the following statement is correct

1) The natural resources in the world have been used by man in a rapid way and so very soon they will be exhausted. The traditional fuel that we use today including petroleum are non-renewable and they would be depleted soon.
2) It is estimated that coal will last for 148 years, petroleum for 40 years and natural gas for 61 years. So, we need to find alternative sources of energy. More over fossil fuels emit harmful gases like carbon dioxide, carbon monoxide and sulphur dioxide which pollute the atmosphere.
3) Burning fossil fuels also cause temperature rise in the earth's atmosphere. Many believe that fuel which does not cause pollution is needed to enhance the quality of our environment.
    a) Both 1 and 2
    b) Both 1 and 3
    c) Both 2 and 3
    d) All 1, 2 and 3

92. From which among the following bio diesel is obtained?

a) Banyan oil
b) Sunflower oil
c) Rubber seed oil
d) Corn oil

Explanation

Bio diesel is a fuel obtained from vegetable oils such as soya bean oil, jatropha oil, corn oil, sunflower oil, cotton seed oil, rice-bran oil and rubber seed oil.

93. In which among the following region of Tamil Nadu wind mills are not located?

a) Kayathar
b) Neyveli
c) Aralvaimozhi
d) Palladam

Explanation

Wind energy is obtained with the help of wind mills. When wind blows, they rotate the blades of the wind mills and current is produced in the dynamo. Wind mills are mostly located at Kayathar, Aralvaimozhi, Palladam and Kudimangalam in Tamil Nadu.

94. Which among the following is not present in Gobar gas?

a) Methane
b) Ethane
c) Propane
d) None of the above

Explanation

Gobar gas is obtained by the fermentation of cow dung in the absence of air (anaerobic conditions). It mainly contains methane and a little ethane. It is widely used in rural areas for cooking and operating engines.

95. Which could be the best alternative fuel in the future?

a) Oxygen
b) Hydrogen
c) Nitrogen
d) Carbon

Explanation

Hydrogen could be the best alternative fuel in the future. It is a clean fuel as it gives out only water while burning. Moreover, it has the highest energy content. It does not pollute air.

96. Which among the following statement is correct regarding solar energy?

1) Sun is the first and foremost energy source that makes life possible on our earth. Solar energy is the one of the viable fuel sources of non-depleting nature for, sun provides a free and non-renewable source of energy.
2) It is the renewable type of energy without endangering the environment. It is the potential source to replace the fossil fuel in order to meet the needs of the world.
3) With the advancements in science and technology, solar energy has become more affordable, and it can overcome energy crisis. Solar energy is a clean energy. With the minimum efforts maximum energy can be harnessed using various equipment's.
    a) Both 1 and 2
    b) Both 1 and 3
    c) Both 2 and 3
    d) All 1, 2 and 3

Explanation

Sun is the first and foremost energy source that makes life possible on our earth. Solar energy is the only viable fuel source of non-depleting nature for, sun provides a free and renewable source of energy.

97. Which among the following application of solar energy is incorrect

a) **It is used in missiles and sub-marines.**
b) It is used in drying of agricultural and animal products and is used in solar green houses.
c) It is used in electric power generation
d) It is used in solar pumping and solar distillation. It is used for solar cooking and solar furnaces also.

Explanation

It is used in solar water heater.

98. Which among the following is not the chemical substance obtained from fractional distillation of coal tar?

a) Benzene
b) Toluene
c) Phenol
d) Enol

Explanation

The fractional distillation of coal tar gives many chemical substances like benzene, toluene, phenol and aniline. They are used in the preparation of dyes, explosives, paints, synthetics fibers, drugs, and pesticides.

99. Which among the following points regarding cetane number is incorrect?

a) Cetane rating is used for diesel
b) It measures the ignition delay of the fuel in diesel engine.
c) Cetane number of diesels can be increased by adding xylene.
d) The fuel with high cetane number has low octane number

Explanation

Cetane number of diesels can be increased by adding acetone.

100. Arrange the following fuel based on calorific value (KJ/kg) from high to low

1) Kerosene
2) LPG
3) Cow dung cake
4) Hydrogen

5) Wood
   a) 2 – 1 – 3 – 5 – 4
   b) 3 – 5 – 1 – 4 – 2
   c) 5 – 1 – 2 – 4 – 3
   d) 4 – 2 – 1 – 5 – 3

Explanation

Calorific value is measured in terms of 125kg-1. The below table give calorific value of different value.

Fuel	Calorific Value (KJ/kg)
Cow dung cake	6000 – 8000
Wood	17000 – 22000
Coal	25000 – 33000
Petrol	45000
Kerosene	45000
Diesel	45000
Methane	50000
CNG	50000
LPG	55000
Biogas	35000 – 40000
Hydrogen	150000