

Class 8th Chapter Coal and petroleum Question with solution

A. Choose the most appropriate answer.

- Renewable resources need to be conserve because
 - we are using them faster than they are replenished by nature.
 - they are slowly disappearing from the earth.
 - if we overuse them nature will stop replacing them.
 - all of these
- It is an important fraction of petroleum. It is further distilled to get lubricating oil and paraffin wax.
 - petroleum gas
 - heavy oil
 - anthracite
 - residue
- Coal mainly contains
 - carbon.
 - carbon and hydrogen
 - carbon, hydrogen and nitrogen.
 - carbon, nitrogen and Oxygen.
- Which of the following is regarded as the best variety of coal?
 - bituminous
 - lignite
 - anthracite
 - peat
- Which of the following is a non-polluting fuel for vehicles?
 - petrol
 - diesel
 - kerosene
 - CNG
- In destructive distillation, coal is heated strongly to about
 - 5000 °C.
 - 1000 °C.
 - 100 °C.
 - 10,000 °C.
- Which of these is not a natural source of energy?
 - coal
 - petroleum
 - electricity
 - sun
- Fossil fuels are
 - renewable but exhaustible.
 - renewable and inexhaustible.
 - non-renewable but can be recycled.
 - non-renewable and cannot be recycled.
- Which of these is not a fossil fuel?
 - CNG
 - LPG
 - petrol
 - hydrogen
- Which of these is obtained by destructive distillation of coal?
 - LPG
 - coal gas
 - CNG
 - methane

A. 1. a 2. d 3. a 4. c 5. d 6. b 7. c 8. d 9. d 10. b

B. VERY SHORT-ANSWER QUESTIONS: Give one-word answers.

- Are natural resources living, non-living or both?
- Petroleum is a renewable resource, as it is naturally renewed in a million years. True or false?
- The process of conversion of wood into coal is called
- is the variety of coal with maximum carbon content.
- Petroleum and natural gas were formed from dead
- In fractional distillation, hydrocarbon_s with the condense (highest /lowest) boiling points first.
- Name two fuels obtained from petroleum, Which can be used as domestic fuels.
- Which fuel is used in jet areoplane?
- Name one non-polluting fuel for 'vehicles.
- What is the colour of the crude oil pumped out from a well?
- Which petroleum product is used for surfacing roads?
- Name the petroleum product used to manufacture candles, Vaseline, grease, polish, etc.
- Which is the ultimate source of the energy of fossil fuels?
- The fuel obtained from coal that is almost pure form of carbon is

Ans: 1. Both 2. False 3. Carbonization 4. Anthracite 5. animals 6. highest
7. LPG and kerosene 8. Petrol 9. CNG 10. Black 11. Asphalt 12. Paraffin wax
13. The Sun 14. coke

C. SHORT-ANSWER QUESTIONS (TYPE I): Answer in a sentence or two.

- Differentiate between renewable and non-renewable resources, giving two examples of each.
Ans: Renewable resources: Resources which are replace naturally within a reasonable period of time through natural processes are known as renewable resources. Examples: sunlight, oxygen, groundwater.
Non-renewable resources
Resources which once used up cannot be replaced naturally within a reasonable period of time are known as Non-renewable resources. Examples: fuels like petroleum, natural gas, coal, top soil, etc.

2. What are fossil fuels?

Ans: Fuel derived from dead remains of plants and animals are called fossil fuels e.g. coal, petroleum and natural gas are.

3. Why should fossil fuels not be wasted?

Ans: Fossil fuels take millions of years to form. So, these should not be wasted. Moreover, they should be used with care and control so that their existing stock could last as long as possible.

4. How is coke obtained?

Ans: coke is formed on destructive distillation of coal at 1000°C . It is the purest form of carbon.

5. What are the advantages of using natural gas as a fuel?

Ans: The advantages of using natural gas as a fuel are: (i) It can be easily transported through pipes. (ii) It is a clean non-polluting fuel for vehicles. (iii) it is economical and easy to handle

6. Why is there a rapid increase in our energy consumption?

Ans: There is a rapid increase in our energy consumption due to two main reasons. They are:

(i) The increase in population. (ii) Industrialization and development of new technologies

7. Why are fossil fuels our most important source of energy today?

Ans: Fossil fuels have been in use since a long time and called conventional sources of energy. On burning it gives us heat and light. The deposits of fossil fuels are going to be exhausted in less than 200 years and took millions of years to form. This is why fossil fuels are the most important sources of energy today.

we must conserve fuels as much as possible so that the existing deposits could last longer and scientists can develop alternate fuels.

8. What is the main purpose of petroleum refining?

Ans: Petroleum contains various hydrocarbons which can be used for different purposes. Therefore, Refining of petroleum is carried out to get Constituents of petroleum like LPG, Petrol, kerosene, diesel etc.

D. SHORT-ANSWER QUESTIONS (TYPE II): Answer in about 30 words.

1. If a resource is renewable, it can still get exhausted. Discuss with two examples.

Ans: . If we use renewable resources faster than they are renewed or if we disturb the natural method of their renewal, then most renewable resources get exhausted. For example:

(i) Groundwater is used faster than it is renewed.

(ii) Forest is a renewable resource provided we don't disturb their natural growth.

2. Why is topsoil considered a non-renewable resource even though it is constantly being formed by weathering of rocks?

Ans: Topsoil takes hundreds of years to form. Once topsoil is eroded, it cannot be replaced immediately

3. Why do we feel the need for conservation more today than our ancestors did?

Ans: We feel the need for conservation more today than our ancestors did.

There are two primary reasons for this:

(i) The population of the world has increased. There are more people on the earth, and they use more resources to feed, clothe and house themselves.

(ii) As human have progressed, their need have increased. Their need for energy has increased several folds. The average resources consumed per person have, therefore, increased considerably.

Because of these two factors, the natural resources today are getting used up and depleted much faster than a few decades back. Therefore, if we do not practice conservation, we will endanger our very survival.

4. How was coal formed?

Ans: Coal was formed from dead plants buried under the earth's crust over millions of years.

5. What are the important uses of coke?

Ans: Important uses of coke are listed below: (i) It is a good fuel and burns with no smoke.

(ii) It is used to reduce metal oxides, to get the metals.

(iii) It is also used to manufacture gaseous fuels like producer gas by passing air through red hot coke, and water gas by passing steam over white hot coke.

6. How was petroleum formed?

Ans: Petroleum was formed from Dead Sea animals buried under the earth's crust over millions of years.

7. Name four important products of petroleum and give their uses.

Ans: Important products of petroleum

products of petroleum	Uses
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1. LPG (Liquefied Petroleum Gas)	Fuel for home and industry
2. Petrol	motor fuel, aviation fuel, solvent for dry-cleaning
3. Kerosene	domestic fuel, jet engine fuel
4. Diesel	fuel for motor vehicles, electric generators.

8. What are the advantages of using energy judiciously?

Ans: Judicious use of energy has two main advantages: (i) It will delay the energy crisis and (ii) It will give our scientists more time to develop more efficient alternate sources of energy.

E. LONGANSWER QUESTIONS: Answer in about 60 words.

1. How is destructive distillation of coal carried out? What are the products obtained and their main uses?

Answer: Destructive distillation of coal is carried out by heating coal strongly to 1000 °C in the absence of air. It yields various useful organic and inorganic products. The products obtained and their uses are listed below:

(i) Coke: (a) It is used metal from ores (b) it is used to manufacture producer gas and water gas

(ii) Coal gas: It was earlier used for domestic cooking and lightning, but is not much used now.

(iii) Coal tar: used to make pesticides, explosives, perfumes, etc.

(iv) Ammonium compounds: making nitrogenous fertilizers.

2. How is refining of petroleum carried out? Name the important products obtained.

Answer: Refining of petroleum is carried out in a petroleum refinery.

Crude oil is first heated to about 400 °C in a furnace.

The vapors formed are passed into a tall fractionating tower.

The hydrocarbons with the highest boiling points condense first.

They get collected near the base of the fractionating tower.

As the vapour rises, the hydrocarbons with lower boiling points condense at different heights.

They get separated in the fractionating tower to form the different fractions.

The various fractions obtained are petroleum gas, gasoline and naphtha, kerosene and light oil, heavy oil and residue.

3. List five things that you can do to help in preventing an energy crisis.

Answer: We can prevent an energy crisis by the following ways:

(i) Using room coolers, air conditioners, geysers, etc., only when needed.

(ii) Reducing the flame of the burners while cooking to save fuel.

(iii) Using CFLs and tube lights, which use less energy, instead of bulbs.

(iv) Using public transport instead of private vehicles as much as possible.

(v) Walking or cycling for small distances.

4. How is CNG obtained? What are its main uses?

Answer: Natural gas is found along with petroleum in reservoirs under the ground. This gas is chiefly made up of methane. It is obtain by drilling and stored under high pressure as compressed natural gas (CNG).

CNG is used for power generation in some parts of India. CNG is used as a non-polluting fuel for vehicles.

HOTS QUESTIONS: Think and answer.

1. If a resource can be replaced within ten years by natural processes, would you classify it as renewable or non renewable?

Ans: Renewable resource as it replenished faster than we use.

2. All renewable resources are inexhaustible. Do you agree? Give reasons.

Ans: No. They are exhaustible if we use them faster than they are naturally replenished.

3. All combustible substances are not fuels. Why?

Ans: A combustible substance are said to be fuel if they generate heat energy at reasonable cost. Therefore all combustible substances cannot be called fuels.

4. Can fossil fuels be made in the laboratory?

Ans: Fossil fuels contain chemicals that can be made in the laboratory. Therefore, in principle, it is possible to make synthetic fossil fuel in the laboratory. However cost effectiveness will be the main issue.

5. Conservation of resources means avoiding their wasteful use. Does this definition cover all aspects of conservation? Explain.

Ans: Conservation of resources does not only imply avoiding their wasteful use. It also implies maintaining their quality, for example, by preventing their pollution.

6. In a petroleum well, crude oil is found above water. Which two properties of petroleum make it possible to form a layer of it above water?

Ans: Petroleum must be lighter than water and insoluble in it.

Extra score

Q. What are different types of coal?

Ans: (a) Peat (less than 20% carbon) (b) Lignite (Brown Coal) contains 25 – 35 % carbon.

(c) Bituminous coal (Soft coal) contains 45 – 86 % carbon.

(d) Anthracite coal (Hard coal - It has the highest heat energy) contain 87 – 97%carbon.

Q. How coal is formed?

Ans: Coal is formed by degradation of wood under the influence of high pressure and temperature over millions of years is called carbonization.

Q. What is destructive distillation of coal?

Ans: When coal is heated in the absence of air is called destructive distillation of coal.

Q. How do various constituents of petroleum is separated?

Ans: Various constituents of petroleum are separated by fractional distillation in fractionating columns is known as refining of petroleum. The various fractions of petroleum obtained are

Fraction	Uses
Petroleum Gas	Fuel for home (LPG)
Petrol	Motor fuel
Kerosene	Fuel for stove and jet aircrafts.
Diesel	Fuel for heavy motor vehicles.
Lubricating oil	Lubrication
Fuel Oil	Fuel for Power Stations and Ship
Paraffin wax	Candles, Vaseline
Bitumen/asphalt	Paints, road surfacing

Q. How is natural gas formed?

Ans: Natural gas is formed whenever vegetation decomposes in marshes, sewage and in coal or petroleum mines. It is made up of 90 % methane.

Q. What are the main uses of Natural gas

Ans: (a) it is used for producing H_2 gas by heating 1250k.

(b) For manufacturing Carbon black that is used in rubber industry as reinforcing agent to make tyre.

(c) For manufacturing Petrochemical and fertilizer

Q. Why petroleum is also called black gold?

Ans: The constituents of petroleum are very useful for us. Due to its great commercial importance, petroleum is also called 'black gold'.

Q. We often use LPG in our home for cooking. How do you detect the leakage of gas? What substance is added to LPG for this purpose?

Ans: A gas like hydrogen sulphide which smells like rotten eggs is added to natural gas

Q. What do you mean by PCRA? What are their tips?

Ans: In India, the Petroleum Conservation Research Association(PCRA) advises people how to save petrol/diesel while driving. Their tips are

- Drive at a constant and moderate speed as far as possible.
- Switch off the engine at traffic lights or at a place where you have to wait.
- Ensure correct tyre pressure. • Ensure regular maintenance of the vehicle.

Q. Name, constituent of petroleum which is used for following purposes. (i) To make candles. (ii) A solvent for dry cleaning (iii) For surfacing roads. (iv) Jet engine fuel. (v) For lubrication.

Ans: (1) Paraffin wax (ii) petrol (iii) Bitumen/Asphalt (iv) kerosene (v) lubricating Oil

Q. What is the composition of coal?

Answer: Coal is a mixture of carbon, hydrogen, oxygen, nitrogen and sulphur.

Q. What do you understand by petroleum refining?

Ans: The process used to obtain various constituents of petroleum is called petroleum refining.

Q. What is petroleum? : Answer: Petroleum is a natural occurring black, smelly liquid which mainly mixture of hydrocarbon and small amount of impurities like sulphur.

That's all