*Why Petroleum is called 'black gold?

♣Petroleum is called 'black god' because it yields several substances that ★ are commercially successful. The useful substances obtained from ☆petroleum and natural gas are called 'petrochemicals'.

☆

☆

☆

☆

☆

☆ ☆

☆ ☆

☆ ☆

☆

☆

☆

☆

Petrochemicals are used in manufacturing:

- Synthetic fibres (such as Polyester, Nylon, Acrylic etc.),
- ☆ Detergents,
- ☆ Polythene, and
 - Man-made plastics.

★Natural gas also yields Hydrogen gas which is used in the production of fertilisers (such as urea).

$^{\stackrel{\wedge}{\sim}}_{\stackrel{\wedge}{\sim}}$ Natural Gas

☆ ☆

☆ ☆



Figure 1 Natural Gas

ANatural gas is a fossil fuel found naturally as a hydrocarbon gas mixture ★ 🏋 in the oil wells. Its main component is methane but it may also contain 🌣 Avarying amounts of other higher alkanes (a group of elements). Gases & 🌣 like carbon dioxide, helium, nitrogen, and hydrogen sulphide are also 🌣 Afound in natural gas in small percentages.

₩hy is Natural Gas important as a fossil fuel?

- Natural gas is considered important as this fossil fuel can easily be transported through pipes. ☆
 - It is stored as CNG which is used for several purposes and is also used as a starting material for manufacturing many chemicals and fertilisers.
 - Natural Gas does not cause pollution and has high calorific value.

*Compressed Natural Gas (CNG) is the natural gas stored under high * pressure.

☆Why is CNG useful?

CNG is used as:

☆☆

☆

 $4 \leftrightarrow 4 \leftrightarrow 4$

☆

☆

☆

☆☆

☆

☆ ☆ ☆ ☆

☆

- Fuel to generate power
- Cleaner fuel for transport vehicles (less polluting than petrol and diesel)

- **☆ ☆** Fuel in homes and industries which can be supplied through pipes.
 - CNG pipeline network already exists in Vadodara in Gujarat, some parts of Delhi and some other places.

Why is CNG considered as a cleaner fuel?

- ☆ Natural gas is considered a better fuel than coal and petroleum * because it is cleaner.
 - This means that it results in less amount of pollution that the other fossil fuels.
- ☆ ☆ ☆ Natural gas emits 50% less carbon dioxide, sulphur and nitrogen * oxides in the air.
- However, it is not the best solution as there are better sources of energy present nowadays like solar energy

☆

☆ ☆

☆

☆

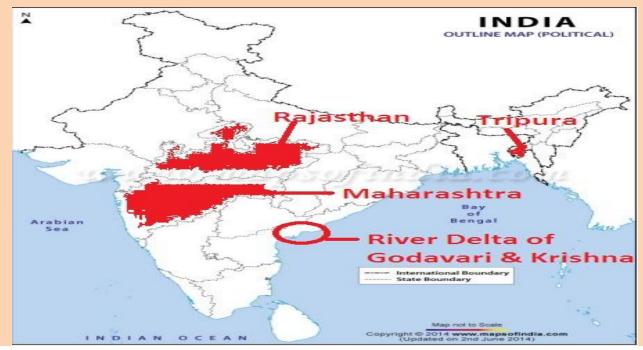
☆

☆

☆

☆

☆



Some Natural Resources are Limited

★Fossil fuels, such as coal, petroleum, and natural gas cannot be created ★ $\stackrel{\circ}{\mathbb{Z}}$ in the laboratory as it is not possible to create the natural conditions $\stackrel{\circ}{\mathbb{Z}}$

under which they are formed. Moreover, it takes thousands of years for Sthem to be formed.

Consequences of the burning of fossil fuels

- 1 Increase in air pollution: The burning of fossil fuels results in the $\stackrel{\frown}{\sim}$ release of unburnt carbon particles in the air. These particles act as $\stackrel{\frown}{\sim}$ 🌣 pollutants and increase air pollution. Fossil fuels release poisonous 🌣 🕏 gases such as carbon monoxide and sulphur dioxide in the atmosphere. 🕏
- 2 Global Warming: Fossil fuels when burnt release large amounts of ☆carbon dioxide in the air. As the amount of carbon dioxide increases it ☆ results in an increase in the global temperature of the earth and leads to ☆global warming.

Why should we use fossil fuels economically?

- 1, They are available in limited quantities.
- 25 Burning these fuels also cause air pollution as well as global warming.

*Hence, we should use these fuels economically to make sure that we acan use them for a longer time, the risk of global warming gets reduced, rand we can live in a cleaner environment.

☆

☆

☆How can we save petrol or diesel while driving?

★According to the Petroleum Conservation Research Association (PCRA) Lin India, we can save petrol or diesel while driving by:

- 1. Drive at a constant and moderate speed.
- 2 Maintain tyre pressure at correct levels.
- 35 Switch off the engine when you are waiting (such as traffic light).
- 4. Do regular maintenance of your vehicle.

Mhy fossil fuels can last for 100 years only?

- Fossil fuels are exhaustible resources which mean that they are not present in abundant quantities on the earth.
- They take hundreds and thousands of years to replenish.
- The rate at which they are being consumed today is increasing at a $\frac{1}{2}$ rapid pace.
 - It means that more amounts of fossil fuels are being used than it is being replenished.
 - Hence, scientists claim that they can replenish completely in 100 years.