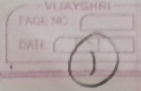


1 chap

Class VIII



Hello dear students

I am your science teacher. Prabha Samadhya. I think everyone knows me. I am sending you questions answers of a chapter. Please write down in your cw copy.  
chapter 1

### Crop production

#### Key terms

Agriculture : The science of practising farming

Compost : Manure prepared by decomposing organic waste

Horticulture : The science of growing vegetables, fruits and flower on a large scale

Irrigation :- Watering the crop fields

Pesticides : chemicals used to kill the pests found on crops.

Weedicides : chemicals used to destroy weeds

(2)

Definitions

- 1 Animal husbandry :- The rearing of animals to obtain milk, meat and eggs is called animal husbandry.
  - 2 Agriculture practice :- The practice of growing crops and rearing animals for food, clothes and other useful products.
  - 3 Ploughing :- Ploughing is the process of loosening and turning over of soil. It is also known as tilling.
  - 4 Transplantation :- In some crops like paddy (rice) and many vegetables (Chillies, tomato, etc) the seeds are sown in the nursery. They grow into tiny plants called seedlings which are transferred to the main field. This is called transplantation.
- Irrigation :- The process of watering crop plant in the field at different

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intervals is called irrigation.

Weeds :- The unwanted plants that grow naturally along with crop plants are called weeds.

Weeding :- The removal of weeds from the field without harming the crop plants is called weeding.

Harvesting :- The cutting and gathering of crop after it is matured is called harvesting.

Threshing :- The process of separating grains and husk from the harvested crop is called threshing.

Winnowing :- The process of separating the hay and chaff from the grains with the help of wind.

(4)

Q. Answer the following questions  
(very short type)

1. Name the chemical compounds used to increase soil fertility.  
Ans. Azotobacter and Mycorrhiza are the chemical compound used to increase soil fertility.

2. Which irrigation method provides water to plants drop-by-drop at their base?

Ans. Drip system of irrigation provides water to the plant drop-by-drop at their base i.e. near the roots.

In which type of farming crop is raised by providing organic manure and applying biological control?

Organic farming is the type of farming crop is raised by providing organic manure and applying biological control.



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Q4 What is overflowing of fields causing accumulation of water for long called?  
Ans: Overflowing of fields causing accumulation of water for long is called water logging.

Q5 What are the organisms that attack and damage crops called?  
Ans: The organisms that attack and damage crops ~~pests~~ are called pests. Examples grasshopper, aphid, termite, moth etc.

Q11 Answer the following questions  
(short type).

Q1 Name different types of crops on the basis of their growing season.  
Ans: The different types of crops on the basis of their growing season are

(i) Rabi crop - Rabi crop are sown in October / November and harvested in March / April. Examples - wheat, gram, peas, mustard etc.

1. Kharif crops are grown during rainy season in June / July and harvested in September / October.  
Examples:- Paddy (rice), maize, sorghum, bajra, groundnut, pulses, soyabean, cotton etc.

2. Name the different agriculture practices in the correct order.

3. The basic agricultural practices include

- > Preparation of soil
- > Application of manures and fertilisers.
- > Selection and sowing of seeds.
- Irrigation
- Protection from weeds
- Protection of crops from pests and diseases.
- Harvesting
- Threshing and Winnowing
- Storage of grains.

4. What are advantages of ploughing the field?



Ans The advantages of ploughing:

- Ploughing loosens the soil which allows easy and deeper penetration of roots.
- It helps in trapping air in the soil which is necessary for roots.
- It increases water-retention capacity of the soil.
- It uproots undesirable plants and weeds growing in the field.
- It mixes manures and fertilisers with the soil.

Q4 What are the two methods of sowing seeds?

Ans The two methods of sowing seeds are

1. Manual method - It involves scattering of seeds by hand and is called broadcasting. Seeds of maize, berseem, bayra are sown by this method.
2. Mechanical method - In this method, sowing is done by a seed drill. The seed drill makes furrows.

in the soil and seeds fall into the furrows at regular distance and at proper depth

- Q5 Explain any two modern methods of irrigation.
- Ans. Two modern methods of irrigation

- Furrow irrigation: In this method, water enters the field through channels or furrows made between two rows of crop plants.

- Drip system: This system of irrigation provides water to the plants drop by drop just at their base, i.e. near the roots. The water is not wasted at all and the plants get regular water supply.





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Q6 Name different food products that we get from animals.

Ans

Animals

Food products

- |   |                              |
|---|------------------------------|
| 1. Hen, duck                                  | Egg and meat                 |
| 2. Cow, buffalo, sheep, goat, yak, camel, pig | Meat, milk and milk products |
| 3. Honeybees                                  | Honey                        |
| 4. Fish                                       | Meat, oil                    |

Q7 Answer the following questions (long type)

Q1 Differentiate between manures and fertilisers.

Ans

Manure

Fertiliser

- |   |   |
|---|---|
| 1. Manure is a natural substance obtained by the decomposition of animal wastes like cow dung, human wastes and plant residues. | Fertiliser is an inorganic salt or an organic compound. |
|---|---|

Manure

Fertiliser

- |   |   |   |
|---|---|---|
| 2 | Manure is not nutrient specific. It only removes the general deficiency of nutrients. | Fertiliser is nutrient specific and provides specific nutrients to the soil.  |
| 3 | Manure is not very rich in nutrients like nitrogen, phosphorus and potassium.         | Fertiliser is very rich in nutrients like nitrogen, phosphorus and potassium. |
| 4 | Manure provides humus to the soil.  | Fertiliser does not provide any humus to the soil.                            |
| 5 | It is prepared in the fields.   | It is manufactured in factories.  |
|   | It is not readily soluble in water and it is absorbed by the plant slowly.            | It is soluble in water and is easily absorbed by the plants.                  |



11  
Q2. What is weeding? What are the different methods of weeding?  
Ans. The removal of weeds from the field without harming the crop plants is called weeding.

The different methods of weeding

#### Mechanical method :-

- Weeding from the soil, before sowing seeds is done by using big, comb like implement called harrow or rake.
- From a standing crop, weeds are removed manually by pulling them out by hand or by using a trowel (khurpi). Or hoe.

Chemical method :- The chemical substance used to kill weeds are called weedicides. The weedicides kill the weeds but do not harm the crop plant. Eg - 2,4-D (ie 2,4-dichlorophenoxy acetic acid).

Biological method :- In biological control insects are released in the field which feed on weeds.

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and destroy them. For example, mechanical insect in Tamil Nadu is used to eliminate prickly pear (*Opuntia*) from the crop field.

Q3 What are the advantages of sowing seeds with a seed drill?

Ans The advantages of sowing seeds with a seed drill are

- Seeds are sown uniformly at proper distance.
- Seeds are sown at proper depth in the furrows only.
- Seeds get covered with soil. This prevents the chance of seeds being picked up and eaten by birds.
- It is faster and saves time as well as labour.
- It prevents wastage of seeds due to unequal distribution.

Q4. Write some preventive measures to control pests in stored grains?

Ans. The stored grains can be protected from insect and fungal infestation.

- Fumigation with chemicals (fumigants) which kill or repel pests without affecting stored grain.
- Neem leaves are kept along with the grain to repel pests.
- Small quantity of vegetable wax mineral oil is added to grains of legumes to prevent pests from laying eggs and to check larval development.
- The storage area can be sprayed regularly after every three weeks to kill pests.
- For storing grains at home, powdered neem leaves and black pepper are mixed to check insects' eggs and larvae.

Synthetic fibres and plastics.I Key terms

Monomer - Small units which join to make a bigger unit.

Polymer - A very large unit made up of thousands of smaller units joined together.

Thermoplastic - The plastic that can be remoulded as many times as desired.

Thermosetting plastic - The plastic that cannot be remoulded after setting, even on heating.

II Definition

1. Thermosetting plastic - The plastic are polymers which once set cannot be shaped even cannot be reshaped even on heating.

2. Polymer :- A very large unit made up of thousands of smaller units joined together.

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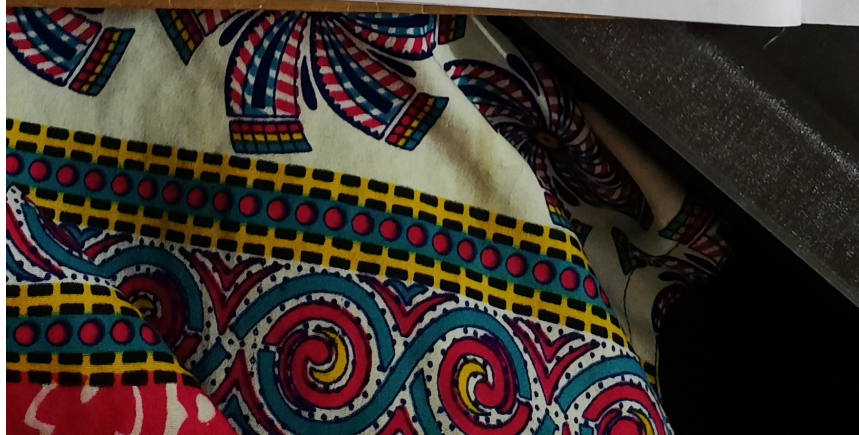
3 Monomer:- Small unit which join to make a bigger unit.

4 Synthetic fibres- Synthetic fibres are fibres made by chemical processes. These fibres are made by man. Examples - rayon, nylon, polyester and acrylic.

5 Polymerisation- The process of joining together of monomers to form a polymer is known as polymerisation.

III. Answer the following questions (Very short)

- Q1 What is the other name of synthetic fibre?  
Ans The other name of synthetic fibre is man-made fibre.
- Q2 Which is the first fully synthetic fibre?  
Ans Rayon is the first fully synthetic fibre.



Q3 What kind of plastic is bakelite?  
Ans Bakelite is thermo-setting plastic.

Q4 What is the full form of PVC?  
Ans The full form of PVC is Polyvinyl chloride.

Q5 What are the small units that join to make a polymer?  
Ans The small units that join to make a polymer are monomers.

Q6 Name the synthetic fibre that is used as a cheaper alternative to wool.  
Ans Acrylic is also a synthetic fibre that is used as a cheaper alternative to wool.

Q7 From where are natural fibres obtained?  
Ans Natural fibres are obtained from plants and animals.

IV Answer the following questions (short type)





(4)

Q1. What is polymerisation?  
Ans. The process of joining together of monomers to form a polymer is known as polymerisation.

Q2. Write the properties and uses of rayon.  
Ans. Rayon is a synthetic fibre.

#### Properties of rayon

- Rayon is a good absorbent.
- It does not shrink.
- It is cool to wear and has silk like appearance.

#### Uses of rayon

- Rayon is used in textile industries for making cloth.
- It is used in making carpets and bed sheets.
- It is used in making bandages.

Why are handle of kitchen utensils made of bakelite?  
Give reason.

Ans. The handle of kitchen utensils



are made of bakelite because they do not become soft on getting heated and they are poor conductors of heat.

- Q4. What are synthetic fibres? Give their examples.
- Ans. Synthetic fibres are made of small units called monomers. They are much stronger and do not absorb water and dry up quickly.

Examples of synthetic fibres —  
nylon, rayon, polyester, acrylic.

- Q5. Write the properties and uses of nylon.
- Ans. Nylon is tough and strong and a thermoplastic.

#### Properties of nylon

- Nylon is very strong i.e. has high tensile strength.
- It is shiny and elastic.
- It is soft, smooth and light weight.
- It absorbs less water and dries



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- quickly
- It has wash and wear properties, i.e., it does not require ironing.

### Uses of nylon

- It is used in clothing to make dresses, track suits, socks, swim wears, rain coats, stockings, shorts, etc.
- It is used in making curtains, bed sheets etc.
- It is used in making ropes, parachutes, fishing net, tooth brushes, car seat belts, sleeping bags, rackets - strings, tyres, umbrellas etc.

5. Why it is not advisable to wear synthetic clothes in the kitchen?

1. It is not advisable to wear synthetic clothes in the kitchen because if accidentally the clothes catch fire the synthetic clothes melt and stick to the



body of the person wearing them. Synthetic fibres are also highly inflammable and generally catch fire easily.

Q7. Differentiate between thermoplastic and thermosetting plastic.

Ans

#### Thermoplastic

1. Thermoplastic can be reshaped (remoulded) as many times as desired.

2. They are polymers which soften and get deformed on heating.

Examples:- polythene, P.V.C (poly vinyl chloride), polystyrene.

#### Thermosetting plastics

Thermosetting plastics are polymers which once set cannot be reshaped even on heating.

They do not soften or melt on heating.

Examples:- melamine and bakelite.

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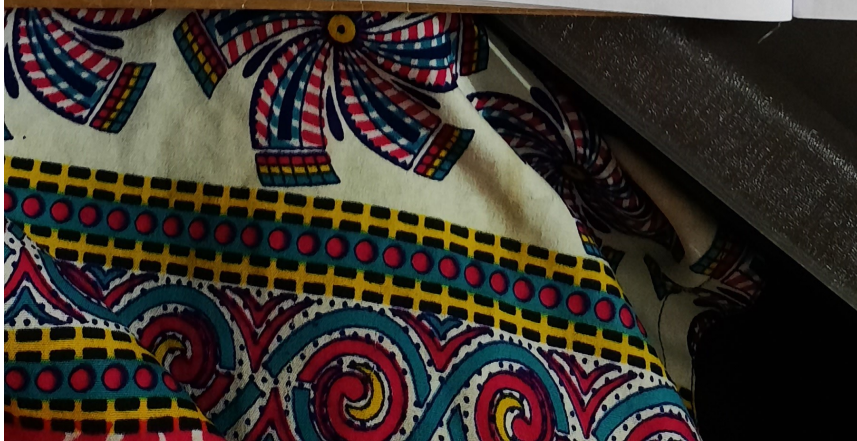
Q8 List some difference between synthetic fibres and Natural fibres.

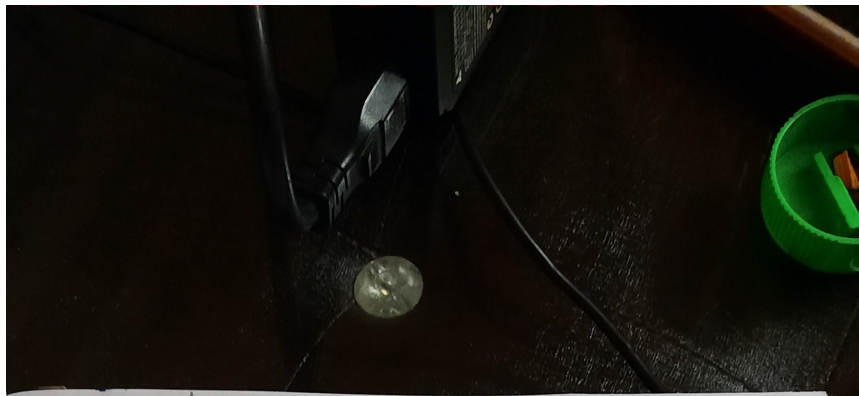
Ans

Synthetic fibres

Natural fibres

- |  |  |
|--|--|
| 1. Synthetic fibres are produced from chemical substances. | Natural fibres are produced from natural substances.                 |
| 2. They are much stronger.                                 | They are not very strong.  |
| 3. They do not absorb water, and dry up quickly.           | They absorb water and take time to dry up.                           |
| 4. They are durable, moth resistant and easy to maintain.  | They are not so durable, affected by moth and difficult to maintain. |
| 5. They are easily washable and wrinkle-free.              | They are not easily washable and wrinkle-free.                       |
| They are less expensive.                                   | They are expensive.  |





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Q9. Why are plastics used to make a number of objects?

Ans. Plastics are used to make a number of objects because plastics are durable. They are resistant to weather conditions and can be melted by heating to make a wide variety of products.

Q10. Why do electric plugs not melt even if the wires inside them get over heated?

Ans. The electric plug have metal metal wires in it. Metals are known to have high boiling boiling point and the wire inside these plug is coated with plastic which is said to have lesser boiling point than the metals. So the electric plugs do not melt.



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VI. Answer the following questions  
(long type).

Q1. Describe the properties of plastic  
and their uses.

VI. Properties of plastics

- Plastics are durable
- Plastics are resistant to weather conditions
- Plastics can be coloured easily.
- Plastics can be shaped easily.
- Plastics are recyclable.
- Plastics are resistant to many chemicals, water and air.
- Plastics are inexpensive and quite strong.
- Plastics can be reused.

Uses of plastics.

It is used in making carry bags.

It is used in making household items like mugs, cups, bottles etc

It is used in making water pipes



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- and tanks
- It is used in making soles of shoes and raincoats.
  - It is used in packaging and ~~plastic~~ making plastic toys.
  - It is used for making table tops and crockery.
  - It is used for making electrical switches and other electrical fittings.

Q2. Explain the harmful effects of using plastics. Write some measures to be taken to reduce plastic pollution.

Ans. The harmful effects of using plastics

- Plastic affects human health - Toxic chemicals leach out of plastic and are found in the blood and tissue of nearly all of us. Exposure to them is linked to cancers, birth defects etc.
- Plastics are nonbiodegradable.
- Plastics choke the drains and affect the sewage system causing water to overflow during monsoon season.



Measures to reduce plastic pollution

- Use jute, cloth or paper bags instead of plastic bags.
- Encourage reuse of plastic.
- Ensure proper disposal of plastic bags.
- Try to buy product which have less plastic packaging.
- Minimise the use of plastic materials.
- Do not throw polypacks, plastic bags here and there after use.
- Do not burn plastics, they produce poisonous gases.

Q3 Write advantages and disadvantages of synthetic fibres.

Ans: Advantages of synthetic fibres

- The fabrics of synthetic fibres are readily available, less expensive and more durable.
- The synthetic fibres have good elasticity and the fabrics of these fibres do not



- wrinkle easily.
- Because of their elasticity and durability they can handle heavy loads without breaking.

### Disadvantages of synthetic fibres

- Since they melt easily, special care is to be taken while ironing the fabrics.
- Most of the fabrics of synthetic fibres becomes sticky on absorption of little moisture which them unfit to wear during summer.
- It is very dangerous to go near the fire source wearing a fabric of synthetic fibre as it may catch fire quickly.

VI write one word for the following

- 1 A synthetic fibre also called: artificial silk - Rayon
- 2 The first true synthetic fibre - Nylon
- 3 The most common used: polyester-Terylene  
Terylene

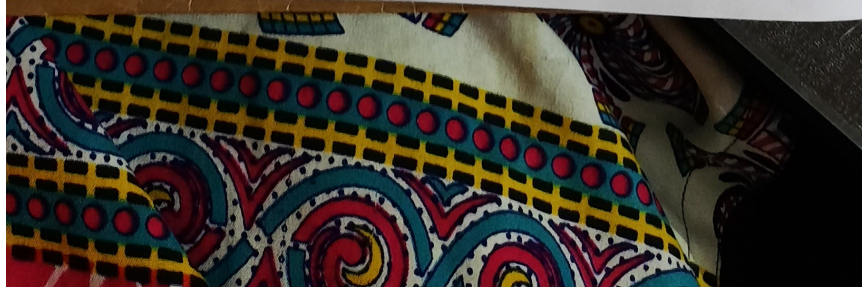


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- 4 A synthetic fibre also known as lycra - Spandex
- 5 A synthetic fibre that closely resemble wool - Acrylic.



chapter 5

Coal and Petroleum

I Keyterm

Carbonisation - slow conversion of dead trees and plants into coal.

Coal gas - The gas obtained when coal is heated in the absence of air.

Coal tar - A thick black liquid formed by heating coal in the absence of air.

Coke - A solid fuel formed by heating coal in the absence of air.

Natural gas - A fuel consisting of methane.

II Define these terms

- 1. Natural resource - A natural resource is what people can use which comes from the natural environment.  
Examples - air, water, wood, oil, wind energy, natural gas, iron and coal.



2. Inexhaustible natural resources -  
Inexhaustible natural resources are those which cannot be depleted, solar radiation, wind, solar radiation for instance.  
Examples - air, sunlight, water and soil, geothermal energy.
3. Exhaustible natural resources -  
Exhaustible resources are those resources which are present in limited quantity and can be completely used up by human activities are called exhaustible resource.  
Examples - Coal, Petrol.
4. Fossil fuel - A fossil fuel is a fuel formed by natural processes, such as anaerobic decomposition of buried dead organisms, containing organic molecules originating in ancient photosynthesis that release energy in combustion.
5. Carbonisation - It is the conversion of organic matter like plant and dead animals remains into carbon through destructive distillation.



6 Destructive distillation of coal -  
The heating of coal in the absence of air is called destructive distillation of coal.

7 Petroleum refining - The various constituents of petroleum (petroleum gas, petrol, diesel oil, paraffin wax, fuel oil, lubricating oil, naphtha) are separated by a process called petroleum refining.

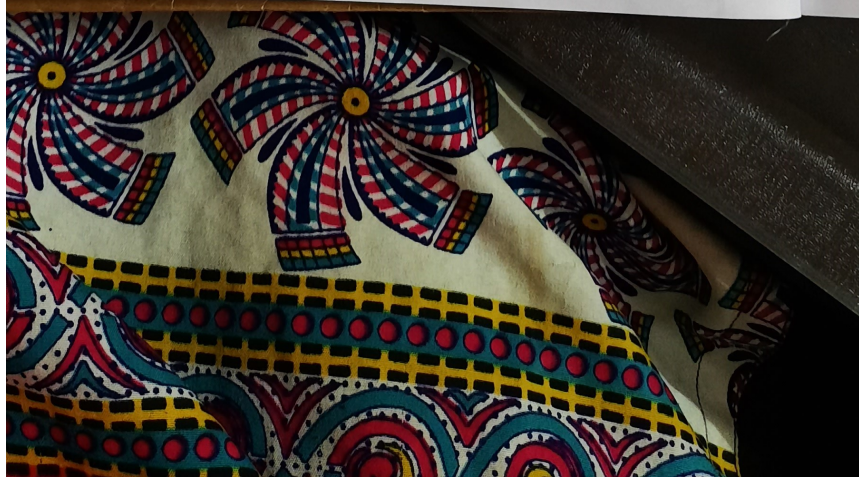
III Answer the following questions (very short).

Q1 Which gas is formed when coal is heated in the absence of air?

Ans. Coal gas is formed when coal is heated in the absence of air.

Q2 Name the solid residue left behind when coal is heated in the absence of air.

Ans. Coke is the solid residue left behind when coal is heated in



the absence of air.

Q3. Mention an oily liquid formed when coal is heated in the absence of air.

Ans. Coal tar is an oily liquid formed when coal is heated in the absence of air.

Q4. Name the components obtained after refining of petroleum.

Ans. The components obtained after refining of petroleum are: petroleum gas, petrol, diesel oil, paraffin wax, fuel oil, lubricating oil, naphtha, etc.

Q5. Mention any three inexhaustible natural resources.

Ans. Air, water and soil are inexhaustible natural resources.

Q6. Name any three natural resources.

Ans. Air, water and sunlight.

Q7. Name an important fossil fuel.

Ans. Coal.



Q8 Give one important use of coal gas.

Ans. Coal gas is used as an important industrial fuel as it produces a lot of heat on burning.

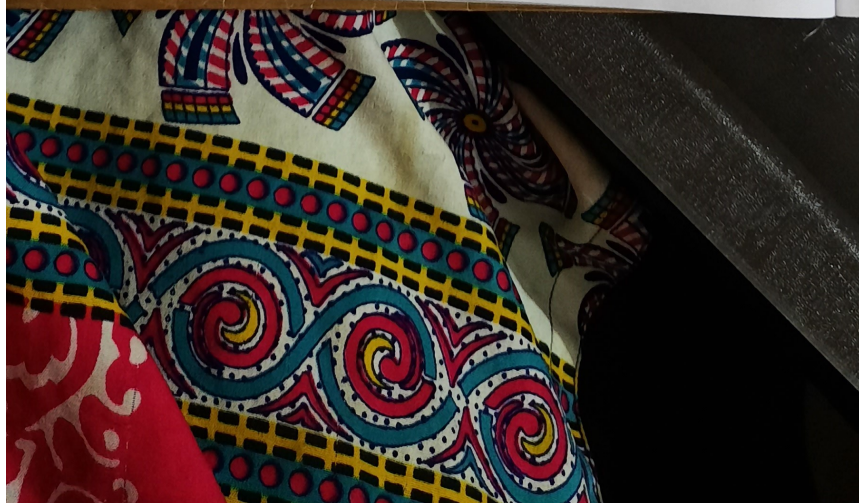
Q9 Give any one use of each of the following

(1) Petroleum gas  
Ans. It is used in the production of carbon black.

(2) Fuel oil  
Ans. It is used in some power plants to generate electricity.

(3) Diesel oil  
Ans. It is used as a fuel for buses, cars, ships, trucks etc.

Q10 What is petroleum?  
Ans. Petroleum is a naturally occurring liquid. It is a mixture of various liquid hydrocarbons & chemicals made of only carbon.





and hydrogen.

IV Answer the following questions (short type)

Q1. What are the different types of coal on the basis of amount of carbon present in them?

Ans: The different types of coal on the basis of amount of carbon present in them

Types of coal	Carbon content	Properties (Approximate)
1 Anthracite	90%	Shiny black very hard
2 Bituminous	60%	Black in colour break easily
3 Lignite	40%	Brown in colour, softer

Q2. Write some uses of coke, coal gas and coal tar.

Ans: a) Coke

Uses of coke.

1) Coke is used in the extraction

of metals like iron.  
2. It is used in the preparation of fuel gases like producer gas ( $\text{CO} + \text{N}_2 + \text{H}_2$ ) and water gas ( $\text{CO} + \text{H}_2$ ).

(b) Coal gas.  
Uses of coal gas:

1. Coal gas is used as an important industrial fuel as it produces a lot of heat on burning.
2. It was used for street lighting for many years as it produces a luminous flame on burning.

(c) Coal tar  
Uses of coal tar:

Coal tar can be used to make ink, dyes, detergents, insecticides and artificial fibres.

Q3 What is coke? How is it obtained?  
Ans. Coke is greyish-black in colour but is not as shiny as coal.



It has a rough texture. It is a smokeless fuel.

When coal is heated in the absence of air, the volatile impurities (having low melting point and boiling point) and moisture get removed. The solid left behind is coke.

Coke = Coal - Volatile impurities and moisture

Q4. Why is natural gas called a clean fuel?

Ans. Natural gas is called a clean fuel because natural gas burns cleanly and does not produce any ash or smoke on burning. It is highly flammable.

Q5. Does burning of petroleum products cause air pollution?

Ans. Yes, when petroleum products are burnt, they give off pollutants like carbon-dioxide, nitrogen dioxide, carbon monoxide.

and particulate matter.

Q6 Is coke a better fuel than coal?

Ans: Yes, coke is a better fuel than coal because coke does not produce smoke on burning. It produces more heat on burning as compared to coal.

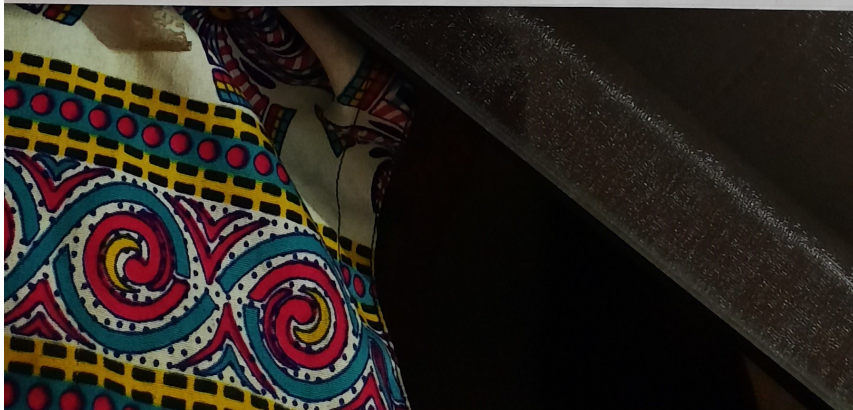
V Answer the following questions (long type)

Q1 List various constituents of petroleum and write their uses.

Ans: Various constituents of petroleum are:

Constituents	Uses
1. Petroleum gas.	- can be compressed into a liquid transported in metal cylinders giving a portable fuel supply in homes and industries.

- In the production of carbon black.
- 2. Petrol
  - as a fuel for cars, bikes, scooters
  - as an aviation fuel.
  - as a solvent for dry cleaning.
- 3. Diesel oil
  - as a fuel for buses, cars, ships, trucks etc
- 4. Kerosene
  - as a fuel for stoves and lamps
  - as a fuel for jet aeroplanes
- 5. Fuel oil
  - used in some power plants to generate electricity.
- 6. Paraffin wax
  - used for making shoe polish, grease, candles, ointments.



Q2. What is coal? Explain its different types and uses.

Ans. Coal is a black (or brownish-black), hard, combustible substance.

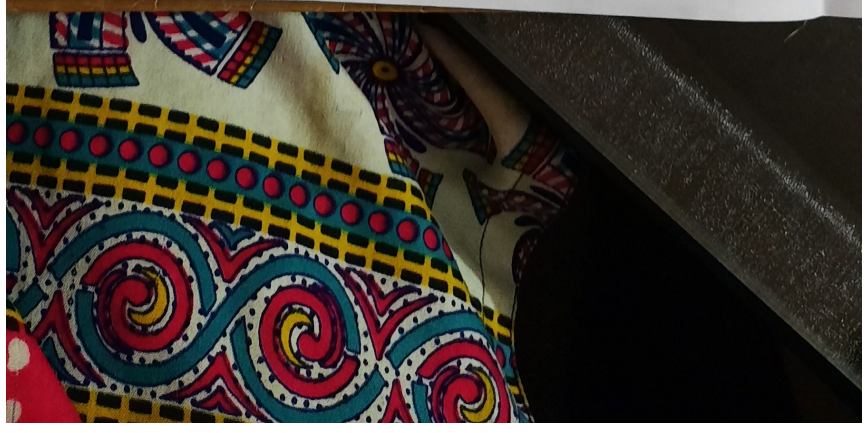
Different types of coal.

1) Lignite coal - Lignite burns with much smoke and flame. Its colour is from yellow to dark brown and rich in volatile constituents.

Uses - It is used for electric power generation.

2) Bituminous coal. It contains a higher percentage of carbon 60% and less water and oxygen than lignite.

Uses - It is used to power plants that produce steam for electricity and industrial uses.

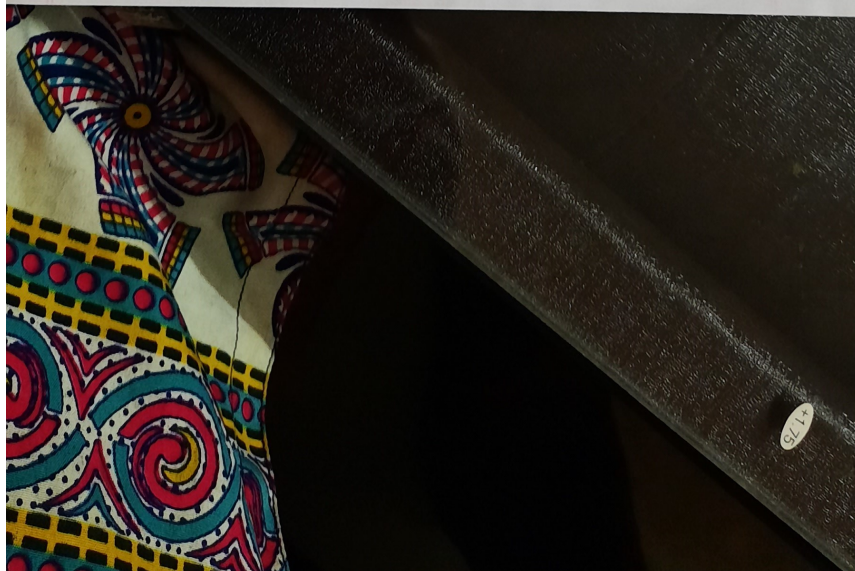


3 Anthracite coal - It is extremely hard and has a brilliant black lustre. It has the highest carbon content 90% and produce practically no smoke or flame.

Uses - It is used for polishing and used in decorative purpose. It is used for a domestic fuel.

Q3 Explain how coal and petroleum were formed.

Ans: Formation of coal → About ~~so~~ three hundred million years ago, our earth was covered with dense forests and swamps having huge trees ferns and other leafy plants. As these trees and other plants died, they fell down on the wet and swampy floor of the forest and began to sink into the soil. More and more dead vegetable matter and soil deposited over them. The heat and pressure from the top layers gradually turned the remains of plant



into coal.

Formation of petroleum.

Petroleum was formed from the remains of very tiny animals and plants that lived in the sea and died millions of years ago. After they died, their bodies sank and got buried at the bottom of the sea.

Over time, they were covered by layers of sand, silt and clay and became very thick and remain buried deeper and deeper.

In the absence of air, enormous heat and pressure from these layers, the dead organisms slowly changed into petroleum and natural gas.





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## Chapter 6

### Combustion and Flame

#### Key Terms

**Combustion:** A chemical reaction in which a substance reacts with oxygen present in the air to produce heat and light.

**Combustible substance:** A substance that can burn or catch fire.

**Ignition temperature:** Minimum temperature at which a substance catches fire.

#### Define these terms

**Combustion:** A chemical reaction in which a substance reacts with oxygen present in the air to produce heat and light.

**Ignition temperature:** The minimum temperature at which a substance catches fire is called its

**ignition temperature.**



3 Calorific value :- The quantity of heat produced by complete combustion of 1kg of a fuel is called its calorific value. It is expressed in KJ/kg.

4 Global warming :- Global warming is the gradual rise in the temperature of earth's surface, ocean and atmosphere.

III. Answer the following questions (very short type)

- Q1. Name the minimum temperature at which a substance catches fire.  
Ans. The minimum temperature at which a substance catches fire is called ignition temperature.
- Q2. Which gas is used to extinguish fire?  
Ans. Carbon di oxide is a gas used to extinguish fire.



Q3. What is the other name for the outer zone of a candle flame?  
Ans. The other name for the outer zone of a candle flame is called non-luminous zone.

Q4. What are the different zones of a candle flame?  
Ans. The different zones of a candle flame are:

1. The inner zone or dark zone.
2. The middle zone or luminous zone.
3. The outer zone or non-luminous zone.

Q5. Do all combustible substances have the same ignition temperature?  
Ans. No, all combustible substances do not have the same ignition temperature.

Q6. What is spontaneous combustion?  
Ans. A substance suddenly bursts into flame without any external sources of ignition. Such combustion is called spontaneous combustion.

Q7. Why can we not use water to extinguish fire caused due to oil or petrol?

Ans. Water cannot be used to extinguish fire caused by petrol because water is heavier than petrol and will settle down if poured on it and the petrol will float up on water and due to which fire can spread to other places easily.

Q8. How does a blanket help in controlling fire if a person's clothes catch fire?

Ans. If the clothes of a person catch fire, a blanket must be wrapped immediately on his body. This cuts the supply of oxygen and helps in extinguishing the fire.

Q9. What if an electrical equipment catches fire? Can we use water in this case?

Ans. No, we cannot use water if an electrical equipment catches fire. This is because water is a good conductor of electricity.

IV. Answer the following questions (short type)

Q1. What are the conditions necessary for combustion to take place?

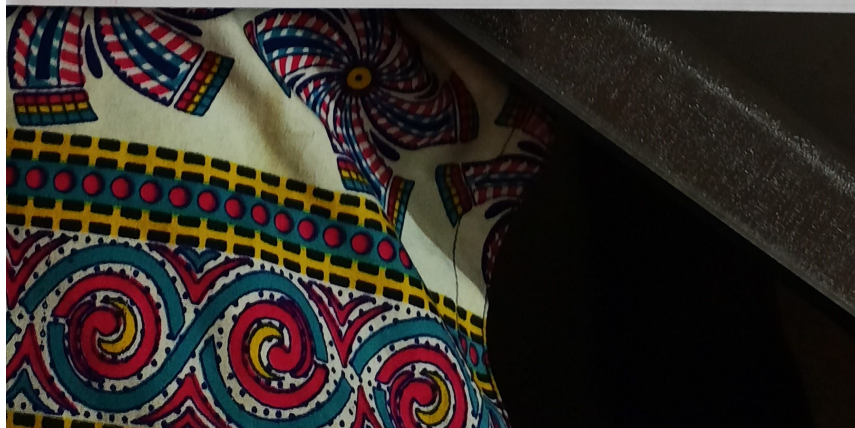
Ans. The conditions necessary for combustion to take place are:

1. Presence of air or oxygen (also called supporter of combustion).
2. A combustible substance
3. Ignition temperature

Q2. Why do all substances not produce flame on burning?

Ans. All substances do not produce flame on burning because certain substances like coal do not vaporize and hence doesn't produce a flame.

Q3. Why are we advised not to use water to put out fire caused by electric wires?



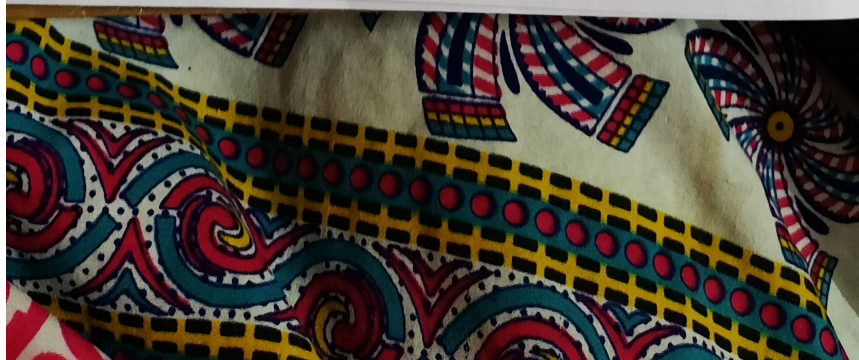
Ans We are advised not to use water to put out fire caused by electric wires because water is good conductor of electricity. It conducts electricity and may result electric shock.

Q4 Explain the types of combustion with the help of examples.

Ans There are two types of combustion

- 1 Rapid combustion
- 2 Spontaneous combustion

1 Rapid Combustion :- On bringing a burning matchstick or a lighter near a gas stove, the gas burns very rapidly. Heat and light are also produced. This type of combustion is called rapid combustion. Along with heat and light a large volume of gas is also produced. This sudden release of large volume of gas may create



large pressure that produces a large noise. This is called an explosion.

18. Spontaneous combustion - Sometimes a substance suddenly bursts into flames without any external sources of ignition. Such combustion is called spontaneous combustion.

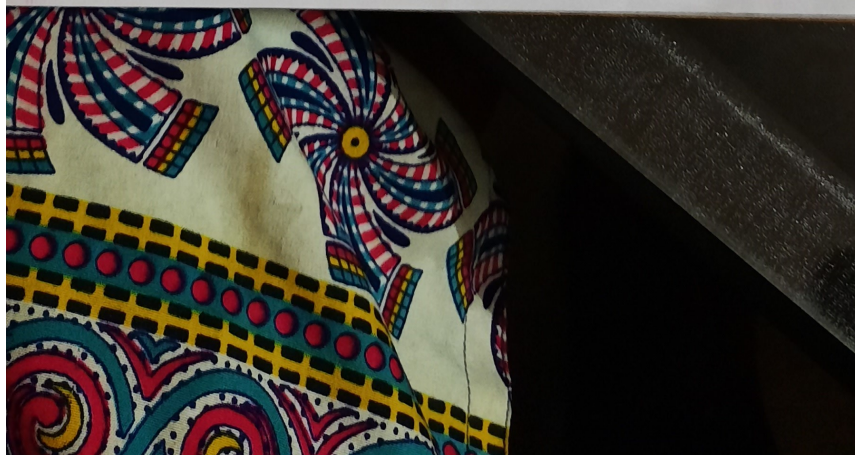
A substance called white phosphorus gets ignited spontaneously at room temperature during summer when the temperature rises to about  $35^{\circ}\text{C}$ . So white phosphorus is stored under water.

I. Answer the following questions (long types).

1. Explain the different zones of a candle flame with the help of a diagram.

1. The different zones of a candle flame are.

- The inner zone (Dark zone) - This zone



as dark-black in colour. This zone consists of unburnt wax vapour. This zone of the candle flame is the least hot. It has a temperature of about  $800 - 1000^{\circ}\text{C}$ .

2 The middle zone (Luminous zone) This is the zone where the wax vapour starts burning. The flame is yellowish as the oxygen is not available in plenty in this region. The wax vapour does not burn completely. The temperature is about  $1200^{\circ}\text{C}$ .

3 The outer zone (Non-luminous zone) This is the zone where wax vapour burns completely as oxygen is available in plenty in this region. The flame is blue in colour and appears non-luminous. The temperature is very high i.e. about  $1400^{\circ}\text{C}$ .



Q2. What is calorific value of a fuel? Write any four characteristics of an ideal fuel.

Ans. Calorific value - The quantity of heat produced by complete combustion of 1 kg of a fuel is called its calorific value. It is expressed in  $\text{kJ/kg}$ .

Characteristics of an ideal fuel

1. The fuel should be easy to store and transport.
2. The fuel should not be expensive.
3. The fuel should be readily available.
4. The fuel should not produce harmful gases on burning and should not leave behind any ash.

Q3. What are the harmful effects of burning fossil fuel?

Ans. The harmful effects of burning fossil fuel are

- Burning of coal in power plant and factories



produces gases like nitrogen di oxide, sulphur di oxide etc. These gases react with oxygen present in the air to form their oxides like nitrogen trioxide and sulphur trioxide. These dissolve in rain-water to form nitric acid and sulphuric acid and fall down to the earth as acid rain.

- Burning of fossil fuel releases carbon di oxide gas in the gas. Carbon di oxide can trap heat. The more the amount of carbon di oxide in the atmosphere, more heat is trapped. This can cause the temperature of the atmosphere of the earth to rise.

49. Some materials burn with a flame, whereas others burn without a flame. Why?

The combustible substance like wax which vaporize on burning, produce flames. And those combustible substance which do not get vaporize on burning do not produce flame. For eg - charcoal



So it depends upon whether the substance will form vapours on burning or not.

Secondly, on burning if carbon present in substance burn completely, flame is produced due to reaction of oxygen with carbon.

Q40b Why is carbon dioxide used to extinguish fire?

Ans Carbon dioxide is a non-conductive and non-corrosive gas used to reduce the amount of oxygen available to the fire. Carbon dioxide is extracted from the atmosphere and stored at high pressure in the liquid state within a fire extinguisher.

## chapter 7

## Conservation of plants and animals

## Key terms

**Biosphere**: Part of the earth where living organisms exist.

**Deforestation** - To clear forest by cutting trees.

**Endangered species**: Species which are facing threat of extinction.

**Endemic species**: Species found in a particular area.

**Extinct species**: Species which existed on land once, have disappeared now.

Define these terms:-

**Flora** - The plant life occurring in a particular region or time, generally the naturally or indigenous - natural plant life. Eg trees of jamun, mango, guava etc.



Fauna - The wild animals found in a particular place or particular geographical region. Eg Tiger, leopard, antelope, sambar, chinkara etc.

Wild life sanctuaries - A sanctuary is a protected land area reserved for the conservation of wild animals, birds and plants.

Biosphere reserve - A biosphere reserve is a specified land area in which multiple use of land is permitted for preserving biodiversity.

Red Data Book - The Red Data Book contain a record of all those species of plants and animals which are under the threat of extinction or are rare and vulnerable for extinction.

Biodiversity - (Bio - life and diversity = variety)

The variety of life forms found on our planet in a particular area. Life forms includes



microorganisms, algae, fungi, plants and animals.

Endemic species - Endemic species are plant and animal species that are found in a particular geographical region and nowhere else in the world. For eg. Lemurs of Madagascar and Tortoises of Galapagos.

Deforestation - The decrease in forest areas across the world that are lost for other uses such as agriculture, cropland, urbanization or mining activities.

Global warming - A gradual increase in the overall temperature of the earth's atmosphere generally attributed to the greenhouse effect caused by increased levels of carbon dioxide, CFCs (chloro fluoro carbon) and other pollutants.



Global warming - The ongoing rise of the average temperature of the climate change system.

Desertification - The persistent degradation of dryland ecosystems by climatic variation and human activities.

Drought - A period of abnormally dry weather sufficiently prolonged for the lack of water to cause serious hydrologic imbalance in the affected area.

Soil erosion - The displacement of the upper layer of soil. It is a form of soil degradation.

Afforestation - The process of planting trees, or sowing seeds, in a barren land devoid of any trees to create a forest.



Conservation - A careful preservation and protection of something especially: planned management of a natural resource to prevent exploitation, destruction or neglect. water conservation, wild life conservation.

Migration: The seasonal movement of animals in group from one habitat to another. The animals that migrate are called migratory animals.

Answer the following questions (Very short type).

1. What are the reservoirs of biodiversity called?  
The reservoirs of biodiversity are called:

Name the zone of biosphere reserve where no human activities are permitted.





- Q2. The zone of biosphere reserve where no human activities are permitted is called core zone.
- Q3. What are the species which are on the verge of extinction called?
- Ans. The species which are on the verge of extinction are called endangered species.
- Q4. Which book contains information about threatened species?
- Ans. The Red Data Book contains information about threatened species.
- Q5. Name the process involved in restocking of destroyed forests by replanting new trees of the same type.
- Ans. The process involved in restocking of destroyed forests by replanting new trees of the same type is called afforestation.



IV Answer the following questions  
(short type)

Q1 Why does biodiversity need to be conserved?  
Ans Conservation of biodiversity is essential because

- Biodiversity maintain balance in nature or balance in the ecosystem
- Wild animals and plants provide a variety of commodities
- Wild life is needed for breeding programmes in agriculture, horticulture, sericulture, apiculture, etc

How does deforestation lead to desertification?

The felling of trees causes change in the physical property of soil. The water holding capacity of soil changes and level of subsoil water is



lowered making the top soil layer dry. It is removed by strong winds causing soil erosion. Gradually the fertile land gets converted into desert. This is called desertification.

23. Write the difference between  
1. Fauna and flora.

Flora	Fauna
The plants found in particular area form the flora of that area.	The wild animals found in particular place or particular geographical region.
<p>For examples - Trees of jamun, mango, guava, pine, chir, oak, deodar, bamboo form flora of Himachal Pradesh. Trees of dhak, salai, jamun, aryan and ber form flora of Rajasthan.</p>	<p>For examples - Tiger, leopard, antelope, sambar, chinkara, nilgai, porcupine, hyena and wild bear form fauna of Rajasthan.</p>



## 2 Extinct and Endangered species

Extinct species	Endangered Species
<p>1. Extinction of a particular animal or plant species occurs when there are no more individuals of that species alive anywhere in the world.</p> <ul style="list-style-type: none"> <li>- The species has died out</li> </ul>	<p>The species that are not likely to survive and will soon become extinct if the same causative factors continue are called</p>
<p>2. Eg - Sabre-toothed cat, woolly mammoth, Dodo, Great Auk, Stellers sea cow, Tasmanian tiger, Passenger pigeon, Pyrenean ibex etc</p>	<p>eg - Amur leopard, Black Rhino, Bornean Orangutan, Cross river gorilla etc</p>

24. What is migration? Why do animals migrate?

25. The seasonal movement of animal in group from one habitat to



another is called migration.

- Animals migrate to.
- escape the inhospitable winter conditions
  - find plenty of food.
  - lay eggs at a warm place where they can incubate early.

Q5 Why should paper be recycled?

Ans Paper should be recycled because recycling paper conserves natural resources, saves energy, reduce green house effect gas emissions and keep land fill space free for other types of trash that can't be recycled.

Q6 Give one difference between endangered and vulnerable species.

Endangered species	Vulnerable species
The species that are not likely to survive and will soon become extinct if	These are species which are likely to move to endangered category



The same causative factors continue in near future, if causative factors continue to operate

- Examples - Indian rhinoceros, Asiatic lion, Indian elephant, lion-tailed macaque, crocodile and blue whale
- Examples - Chinkara deer, black buck and golden langur

Q7 Name the first national park of India when was it established?

Ans: Jim Corbett National Park in Uttarakhand was the first national park established in India in 1936.

Q8 Name the international body responsible for wild life conservation

Ans: International Union for conservation of Nature (IUCN) and natural resources formerly called World Conservation Union, network of environmental organizations founded as the



International Union for protection of nature in ~~France~~ Switzerland.

Q9. What causes desertification?

Ans. 'Climatic variation' and Human activities can be regarded as the two main causes of desertification.

1. Climatic variation  $\rightarrow$  climate change, drought, moisture loss on a global level

2. Human activities - These include overgrazing, deforestation and removal of the natural vegetation

V. Answer the following questions (Long type)

Q1. Describe the different causes responsible for the loss of biodiversity.

Ans. The different causes responsible for the loss of biodiversity are:

1. Habitat loss due to increase



in human population - Great increase in human population is responsible for the rapid decline of biodiversity because more and more land is needed for agriculture, housing, for making roads and for constructing dams, bridges, power houses and industries.

2 Deforestation and overgrazing - Indiscriminate cutting of trees by man causes deforestation. Overgrazing by increased population of cattle and sheep causes shrinkage of grasslands and loss of habitat of wild animals.

3 Pollution - Air and water get polluted with insecticides used in agriculture, toxic elements released from industries and petroleum products.

4 Introduction of exotic species - The species introduced into a new locality from some other area is called an exotic.





species. It competes with the species already existing in that area and may cause extinction of some native species.

5. Climatic changes:- Human activities are causing changes in the temperature and rainfall pattern and also responsible for global warming and melting of glaciers.

6. Human greed:- International trade in wildlife products has threatened the existence of tigers, bears, foxes, elephants, crocodiles etc.

Q2. What are the harmful effects of destruction of forests?

Ans. The harmful effects of destruction of forests are

1. Global warming - The level of carbon dioxide in the atmosphere increase due to deforestation.



2. Change in climate: Deforestation increases temperature, reduce rainfall and increases wind velocity.
3. Desertification: The felling of trees causes change in the physical property of soil. The fertile land get converted into desert.
4. Drought: Disturbed water cycle, reduced rains and lowering of water table due to the removal of trees causes frequent droughts.
5. Soil erosion and flood: Deforestation leads to decreased water holding capacity of the soil that consequently reduces infiltration of water into the ground. so there are frequent flood and the fertile top soil is washed away with water.
6. Loss of wild life: Deforestation leads to loss of wild life & plants and natural habitats of wild animals and depletion of food sources.



Q3 What are the objectives of wild life Protection Act?

Ans The objectives of wild life Protection Act are

- Prohibition of hunting of listed threatened species.
- Setting up and management of national parks, sanctuaries and biosphere reserves.
- Control and management of captive breeding.
- Protection of specific plant and natural habitat of animals.

Q4 Write a short note on Project Tiger and Air Lion Project.

1. Project Tiger :- Project Tiger was launched in 1973 to save tiger from poaching. Initially 9 tiger reserves were established in 1973-74. Now the total number of tiger reserves is 50. The total area covered under these projects is 71027.10 km.



2 Gir Lion Project :- This project was started by the Government of Gujarat in 1972 to protect Asiatic lion lion.

