

ADVENT OF THE EUROPEANS

India had commercial contact with European countries from time immemorial. With the arrival of Alexander the Great these relations became still more intimate. There was a great demand for Indian goods like silk, spices, muslin and handloom fabrics in Europe. India exported pepper, cloves, chillies, cinnamon, ginger, coconut, cane-sugar, indigo etc to western countries through three main trade routes.

The three important trade routes were,

1. Through Afghanistan, Central Asia and the Caspian Sea and terminating at the Black Sea Coast.
2. Through Persia and Syria leading to the port of Alexandria on the Mediterranean coast of Europe.
3. The Sea route passing through the Arabian sea, Persian Gulf and the Red Sea.

But in 1453 A.D. the Ottoman Turks captured Constantinople and troubled the European merchants. They blocked the land route through Afghanistan. The other two routes were also closed as a result of the Arab conquest in the 8th century A.D. So the Europeans were forced to discover a new sea route to India.

The Portuguese

The Portuguese were the first to discover a new sea route to India. Prince Henry of Portugal started a

school for training seamen on scientific navigation. Due to his interest and enthusiasm in the field of Navigation, he has been called as “Henry, the Navigator”.

Bartholomeu Diaz

He was the first sailor who started his voyage in 1487 A.D. He came upto the southernmost tip of Africa. As there was storm, he named it as the **Cape of Storm**. Later on, the Portuguese king changed the name as the **Cape of Good Hope** with a definite hope of discovering a sea route.

Vascodagama

On 27th may 1498, a Portuguese sailor, **Vasco-da-Gama** crossed the Cape of Good Hope and reached Calicut in India. He was given a warm reception by the Hindu ruler king **Zamorin** of Calicut. In 1501 he came to India for the second time and set up a factory at Cannanore. Thus the Portuguese established their factories at Calicut, Cochin and Cannanore, on the West Coast of India.

Francisco-de-Almeida (1505- 1509 A.D.)

Francisco-De-Almeida was the first viceroy of the Portuguese possessions in India. During his period the Portuguese defeated the Arab traders. His policy was to increase the Portuguese naval power so that they might become the masters of the Indian Ocean. This policy of controlling the

settlement by naval force was called as the “Blue Water Policy”. In 1509 Almeida was defeated and killed by the Egyptians.

Alfonso-De-Albuquerque (1509-1515 A.D.)

Albuquerque was the second viceroy of the Portuguese in India. He was a great conqueror. He captured Goa from the Sultan of Bijapur in 1510 and made it as the capital. He also strengthened his relationship with the Vijayanagar Empire. In 1511, he captured Malacca in the Far East and in 1515 he built the port of Ormuz in the Persian Gulf. He can be rightly called as the Real Founder of the Portuguese Power in India. He was a good administrator. He treated the Hindus well and opened schools for their education. He became unpopular with the Muslims due to his religious policy. He encouraged marriages between the Portuguese and the Indian women. He died at Goa in 1515. After the death of Albuquerque, the Portuguese conquered Diu, Daman, Bombay, Ceylon, Salsette, Bassein and Hughli. After about a century the Portuguese power declined.

Causes for the decline of the Portuguese power in India.

Albuquerque's successors were weak. They could not strengthen the Portuguese hold over India. The Portuguese often indulged in piracy against the Indian merchants. The Portuguese often forcibly converted the natives to Christianity. They also destroyed some temples in India.

Their religious policy created enmity of the Muslims. The Portuguese maintained a good relationship only with Vijayanagar kingdom. Therefore the fall of Vijayanagar kingdom in the battle of Talikota 1565 A.D. was a great blow to the Portuguese. In 1580, Portugal came under the rule of Spain. The arrival of the Dutch and the English weakened the Portuguese power in India.

The Dutch

After the decline of the Portuguese power, the Dutch arrived India. The Dutch people of Holland founded the Dutch East India Company in 1602 and began to trade with Eastern countries. They concentrated on East Asia called “Spice Islands”. The Dutch company established its trading centres at Chinsura, Nagapattinam, Surat and Masulipatnam. They founded Pulicat near Madras in 1610 and built a fort there. They also established trading centres at Surat, Broach, Cambay, Ahmedabad, Patna and Kazimbazaar.

Meanwhile the English also sent their merchants to do the spice trade but the Dutch did not like the British interference over there. They made a plan against the English merchants and killed many of the English merchants at Amboyna in 1623 A.D. which came to be known as Amboyna Massacre. This incident created enmity between the English and the Dutch. Then the English left the spice Islands and

concentrated their trade in India.

In India the English had grown very powerful and the Dutch were no match for them. In 1759 the English captured Chinsura from the Dutch and a little later they also captured Nagapattinam. Thus the Dutch power in India came to an end.

The British

In 1588, the English defeated the Spanish Armada and consequently they became the most important naval power of Europe. Then they thought of establishing colonies in the Eastern countries. So the English East India Company was started by 100 London merchants who received permission from **Queen Elizabeth-I** on December 31st 1600 to carry on trade with the East. In 1608, King James I of England sent Captain William Hawkins to the court of the Mughal Emperor Jahangir to obtain permission to establish a factory at Surat. However permission was not given due influence to the Portuguese. In 1615, Sir Thomas Roe arrived at the court of Jahangir and succeeded in getting permission to set up their trading centres at Agra, Broach and Ahmedabad. In 1639, **Francis Day**, bought a piece of land from the Raja of Chandragiri and laid foundation for modern Madras for a small rent. In 1640 the English built **Fort St. George** to protect their trade.

Charles II the king of England married Catherine the daughter of the king of Portugal. He got **Bombay** a small village as a part of dowry. In

1668 Charles II gave Bombay on lease to the English East India Company on a nominal rent of £ 10. In 1699 they got permission from Aurangzeb and set up a factory at Calcutta. Later they built a fort and named it **Fort William** after King William III.

Then they established factories at Hariharpur, Balasore, Hughli and Kazimbazaar. The British settlements soon developed into centres of commercial activities. Thus the English East India Company expanded its influence and control over India till 1858, when the administration of India was taken over by the British Crown from the East India Company.

The Danish

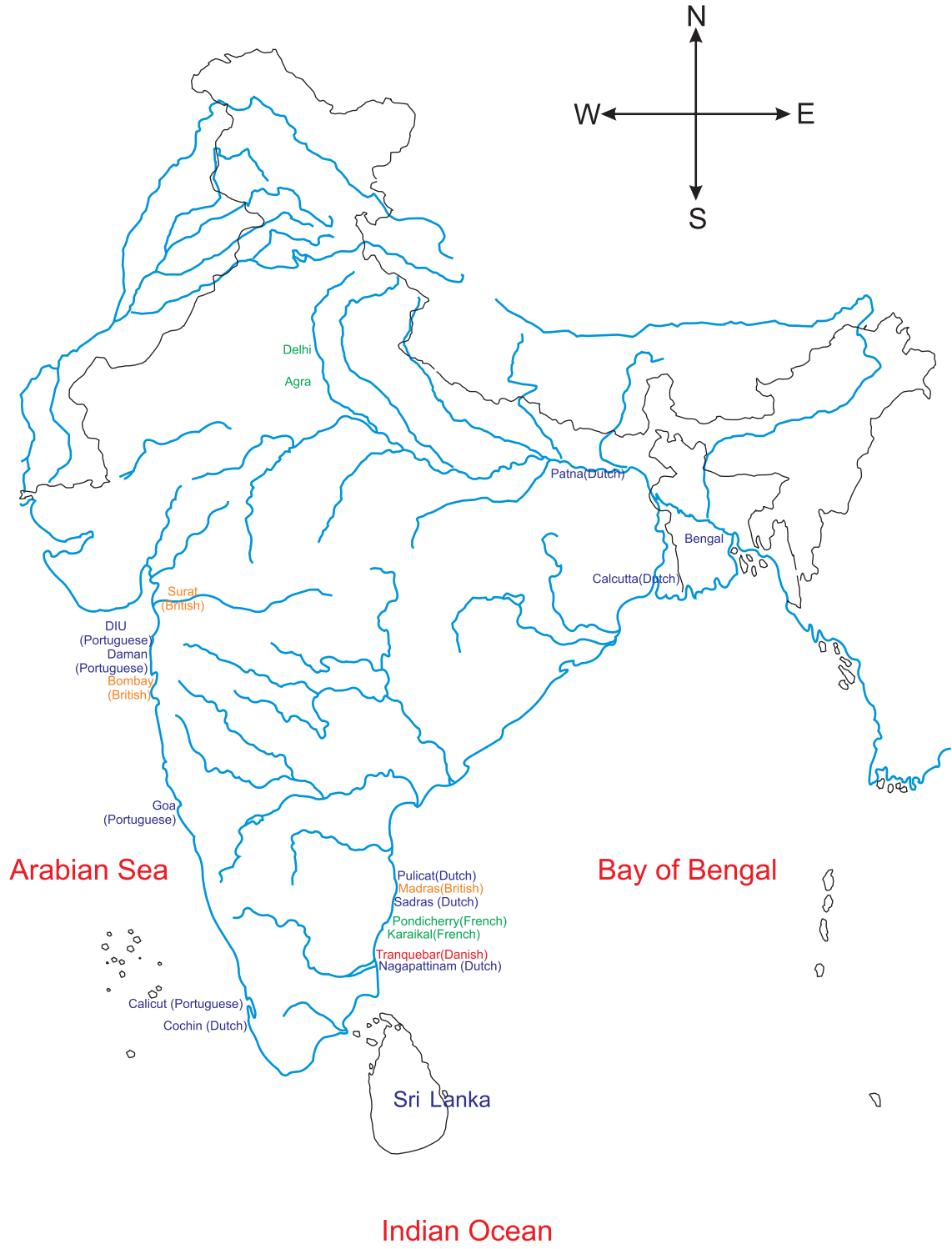
The people of Denmark were known as Danish. They began to trade with India. In 1620 they established their trading centre at Tranquebar and in 1676 at Serampore in Bengal. But they never concentrated in India and sold their trading centres to the British and left India.

The French

Like other European countries, France too realized the importance of trading with India. The French East India Company was established in 1664 by **Colbert**, the minister of **Louis XIV**, the king of France. They set up their factories at Surat in 1668 and Masulipatnam in 1669. In 1674 they got a place to the south of Madras from the ruler of **Tanjore** and laid the foundation of

European Settlements in India

The Portuguese, the Dutch, the British, the Danish and the French



Pondicherry, which became the headquarters of the French settlements in India. In 1690 they established their settlement at Chandranagore. They got Mahe in 1725 and Karaikal in 1739. Dupleix came to India 1742 as the Governor of the French possessions. Under him the French increased their influence all around.

Under such circumstances there was bound to be a conflict between the French and the English for their supremacy in India. The clash of trade interests between the two ultimately led to a series of wars called the Carnatic Wars. Finally the English came out successful and established their power in India by sending the French out of India.

EXERCISE

I) Choose the correct answer.

- The great trading centre _____ was captured by Ottoman Turks in 1453 A.D.
a) Afghanistan b) Constantinople c) Baluchistan
- _____ was the first Viceroy of Portuguese possessions in India
a) Francisco-de-Almedia b) Alfonso-de-Albuquerque
c) Bartholomeo Diaz
- The English East India Company was started in _____.
a) 1600 A.D. b) 1644 A.D. c) 1664 A.D.
- _____ became the head quarters of the French settlements in India.
a) Chandranagore b) Pondicherry c) Mahe

II) Fill in the Blanks.

- The Portuguese captured Goa from the Sultan of _____.
- Captain William Hawkins visited the court of the Mughal emperor _____.
- Sir Thomas Roe arrived India in _____.
- _____ came to India in 1742 as the Governor of the French possessions.

III) Match the following.

- | | |
|------------------|-------------------|
| 1. Vasco-da-Gama | England |
| 2. Mahe | French settlement |
| 3. Spice Islands | Portuguese Sailor |
| 4. King James I | East Indies |

IV) Answer the following in a word.

1. When was the French East India Company formed?
2. Who was Francis Day?
3. In which city is Fort St. George located?
4. In which continent is the Cape of Good Hope located?

V) Answer the following questions briefly.

1. Write any three causes for the decline of the Portuguese power in India.
2. How did the English East India Company acquire Bombay?
3. What were the trading centres of the French East India Company in India.
4. Write a note on Albuquerque.

VI) Answer in detail.

1. Give an account of the English East India Company in India.
2. Write about the establishment of trading centres by the Dutch and the French in India.

VII) Activity.

1. On the River map of India mark the places occupied by the Portuguese, Dutch, the English, the Danish and the French
2. Make a visit to Fort St. George

Formative Assessment

1. Mark "The European continent" on the world map.
2. List out the European countries with the help of Atlas.
3. List out the important Explorers and their discovered regions.
4. Who discovered first – sea – route to India and mark the sea route in the world map.
5. On the outline map of India mark the trade centres of the Portuguese, English and the French.
6. Collect information about the Forts of British.
7. Collect the information about the Forts of your District.

ANGLO - FRENCH STRUGGLE (CARNATIC WARS)

The English and the French East India companies were established with the motive of trading with India. In course of time their competition turned into rivalry and both the powers tried to remove the other from the Indian scene. Their trade interest was also diverted towards politics. Making use of the situation and the rivalry among the native rulers, the English and the French tried to capture power in India and to establish their supremacy.

Between 1740-1763 the rivalry between the English and French led to three wars in India. These wars were known as **Carnatic Wars** as they were fought in the Carnatic region. Carnatic was originally a Mughal Province under the Nawab. It was ruled by **Anwar-ud-din**, the Nawab of Carnatic. The Nawab ruled the territory as an independent ruler. Arcot was the capital of Carnatic.

The British and the French exploited the region to strengthen their power. In the end, the British drove the French out of India by 1763 and established their supremacy over the Carnatic region.

The First Carnatic War (AD.1746-AD.1748)

Causes

This war was an echo of the Austrian war of succession. In this First Carnatic war, the English and the French took opposite sides. They began to fight in India in 1746.

Dupleix, the French Governor of Pondicherry had an ambition to establish the French power in India.

Course

Dupleix wanted to make the French Power supreme in South India. When the war started in Europe, Dupleix sent an appeal to **La Bourdonnais**, the Governor of Mauritius to capture Madras. He besieged Madras and captured it in 1746.

The Nawab of Carnatic, Anwaruddin did not like this. So he sent an army against the French. At **Santhome on the banks of the river Adayar**, Anwaruddin's army was defeated.

Then Dupleix tried to capture Fort St. David from the English but failed. Later the English attacked Pondicherry but the French successfully defended the city. In 1748 the war of Austrian Succession came to an end in Europe. So the Carnatic war also came to an end in India.

Results

The First Carnatic war came to an end by the treaty of **Aix-la-chappelle** (1748) As a result the English got back Madras.

The Second Carnatic War (A.D.1748-A.D.1754)

Causes

The second Carnatic war was connected with the succession disputes between the Nizam of

Hyderabad and the Nawab of Carnatic.

The Nizam of Hyderabad, Asaf shah died in 1748. There arose a competition between his son **NasirJung** and his grandson **Muzzafar Jung**. At the same time the Nawab of Carnatic Dost Ali died. There was a dispute between Anwar-ud-din and his son-in-law Chanda Sahib for the throne of Arcot. The French supported Muzzafur Jung and Chanda Sahib. Hence Nasir Jung and Anwarud-din were forced to seek the assistance of the English. So the war broke out in 1748.

Course

With the help of the French, Muzaffar Jung and Chanda Sahib defeated and killed Anwar-ud-din at the battle of Ambut in 1749. But his son Mohammad Ali took refuge in the fort of Trichirappalli. Chanda Sahib became the Nawab of Carnatic. In Hyderabad, both Nasir Jung and Muzaffar Jung were killed. General Bussy, the French Governor made Salabat Jung as the Nizam of Hyderabad. In return for the French help, he handed over the Northern Circars to the French.

The condition of the English became very critical. Robert Clive a clerk in the English East India Company changed the course of the war. He attacked Arcot, the Capital of Carnatic. He defeated Chanda Sahib and made Mohammed Ali, as the Nawab of Arcot. Clive was called as the "**Hero of Arcot**". Dupleix was

recalled in 1754 and was succeeded by Godeheu.

Results

The Second Carnatic war came to an end by the Treaty of **Pondicherry in 1755**. By this treaty both the sides agreed not to interfere in the internal affairs of the Indian princely states and returned each others territories captured during the war. Mohammad Ali was acknowledged as the Nawab of Carnatic.

The Third Carnatic War (AD 1756-AD 1763)

Causes

In 1756 the Seven Years war broke out in Europe and the same war echoed in India as the Third Carnatic war.

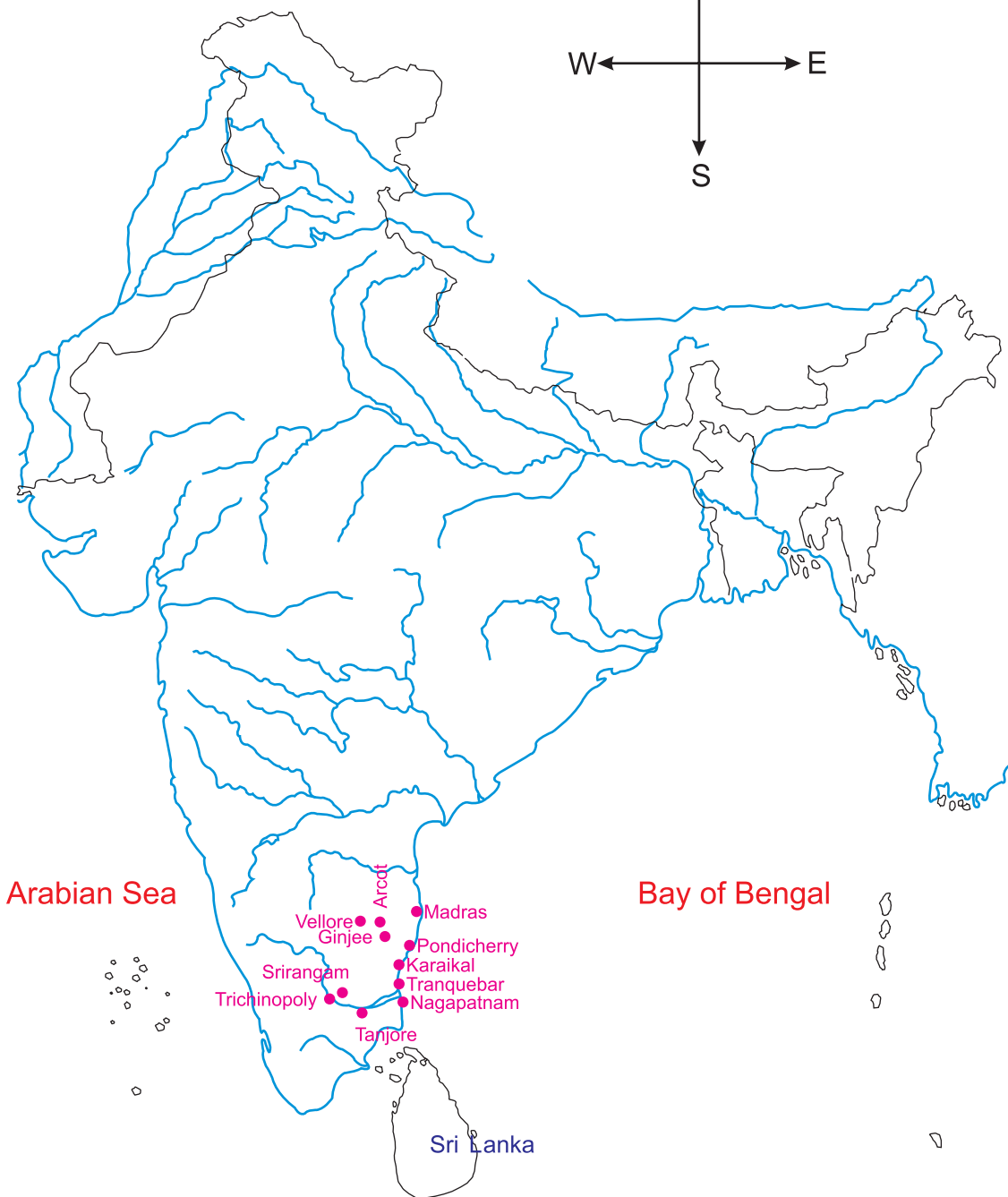
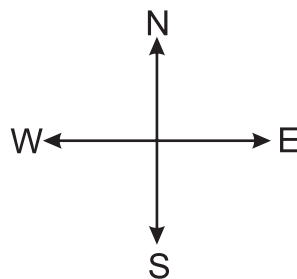
Course

The French General Count de Lally captured Fort St. David. Bussy the French General at Hyderabad was asked to attack Madras which was a great blunder committed by the French. When Bussy left Hyderabad the British captured Hyderabad. **Count de Lally** and Bussy together attacked Madras. But the British general, Sir Eyre Coote defeated both the French generals at the battle of **Wandiwash in 1760**. In the next year 1761 Count-de-Lally surrendered Pondicherry to the British.

Results

The war came to an end by the **Treaty of Paris in 1763**. Pondicherry, Karaikal, Chandranagore and Mahe were returned to the French but

Carnatic Wars



SOCIAL SCIENCE

they were not allowed to fortify them. The French lost all their prestige and influence in India. British became more powerful in India.

Causes for the Success of the British

Britain was commercially superior and the British in India supported by the Home Government. The naval power of the British was far superior than the French. There was full co-operation among the English Officers. The mistakes committed by Count -de -Lally enabled the British to capture Madras. The British could concentrate on wars as there was peace in England while the French were too busy fighting wars in Europe.

Establishment of British Supremacy over Bengal

Bengal a very rich province of the Mughal Empire developed into an independent kingdom under **Alivardi Khan**. After his death, his grandson **Siraj-ud-daulah** became the Nawab of Bengal. Quarrel arose between him and the British in 1757 which resulted in the Battle of Plassey.

Battle of Plassey (AD 1757) Causes

The English and the French were strengthening their fortification in Bengal. Siraj-ud-daulah, Nawab of Bengal asked them not to fortify their Forts. The French obeyed but the English refused to do so. More over the British were misusing

their trade privileges. It enraged the Nawab. Siraj-ud-daulah marched with his army and captured Calcutta.

One hundred and forty six British soldiers were taken as captives and they were locked up in a very small room. Most of them died due to suffocation. Only twenty three of them were survived. This incident in history is called as the **Black Hole Tragedy**. On hearing this tragedy, Admiral Watson and Robert Clive were sent to Bengal. They re captured Calcutta.

Course

On 23rd June 1757 Siraj-ud-daulah met Robert Clive in a village called Plassey near Calcutta. Within a few hours, the Nawab was defeated and killed. British made Mir Jafar as the Nawab of Bengal.

Battle of Buxar

After few years Mir Jafar was removed and Mir Qasim was made as the Nawab of Bengal. Misunderstanding was developed between Mir Qasim and the British. Mir Qasim was also removed, so he entered into an alliance with Shuja-ud-daulah the Nawab of Oudh and Shah Alam II the Mugal Emperor against the British and invaded Bengal. A battle between the combined army of Indian rulers and the British took place at **Buxar on October 22, 1764**. In this battle, Mir Qasim and others were defeated. Mir Qasim fled away from the battlefield while Shuja-II surrendered to the British.

Results

The **Treaty of Allahabad** was signed in 1765 between the English on one side and Shah Alam-II and Shuja-Ud-Daulah on the other side. Shuja-ud-Daulah was asked to pay a war indemnity of 50 lakhs to the British and also gave Kara and Allahabad to the British. The Mughal Emperor was given an annual pension of rupees 26 lakhs. Shah Alam II granted the Diwani rights of Bengal, Bihar and Orissa to the English. Bengal, Bihar, Orissa and Carnatic practically came under the control of the British. The Battle of Buxar made the English East India Company a sovereign power in India.

After the Battle of Buxar, Robert Clive became the Governor of Bengal in 1765.A.D.

The First Anglo-Mysore War (A.D.1767-A.D.1769)

Causes

Mysore under Hyder Ali emerged as one of the most powerful kingdoms. Hyder Ali's growing power and his friendly relations with the French became a matter of concern for the English East India Company. This led to the First Anglo–Mysore War.

Course

In 1766, the British, the Marathas and the Nizam formed a coalition against Hyder Ali. But Hyder Ali was very clever and he bribed the Marathas and the Nizam and won over their support. But in 1767 Hyder Ali and Nizam were

defeated at Changma by the British. But Hyder Ali captured Ambur, Mangalore and established his rule. Then he captured Baramahal, Karur, Tanjore and Cuddalore. He then besieged Madras which forced the English to sign the Treaty of Madras in 1769.

Results

The **Treaty of Madras** was signed in 1769. Both the sides agreed to restore places. The first Mysore war ended in favour of Hyder Ali.

Hyder Ali

Hyder Ali was born in 1722. He was the son of a Faujdar and he started his career as an ordinary soldier. Due to his hard work, he rose up to the position of the Chief of the army. When a Civil War broke out in Mysore, Hyder was in Dindigul. The king of Mysore asked his help. After arriving at Mysore, he over-threw the king and ascended the throne of Mysore. Through he was an illiterate, he was very intelligent. He treated both the Hindus and the Muslims alike. He was known for his impartial Justice.



Hyder Ali

Robert Clive

Robert Clive became the Governor of Bengal in 1765. His first governorship was famous for his conquests. His second governorship was known for his administrative reforms.

Administrative Reforms

The servants of the company were forbidden to receive any gift from Indians. They were forbidden to indulge in private trade. He increased the salaries of the company's servants. Robert Clive gave double Bhatta (field allowances) to the officers in times of peace. He set up a Fund known as **Lord Clive's Fund** with a view to help poor servants of the company

and widow's of those who died in service. After receiving the Diwani (Civil) and Nizamat (criminal) rights from the Mughal emperor Shah Alam II, Robert Clive introduced a new system called **Dyarchy** or **Dual** or **Double Government**. According to this system, the British enjoyed all powers but no responsibility. The Nawab was reduced to a position of all responsibility and no power.

In this system of Government, neither the Nawab, nor the English cared for the welfare of the people. The Dual Government was finally abolished in 1772. Bengal was brought under the direct rule of the company.

EXERCISES

I) Choose the Correct answer .

1. The Carnatic Wars were fought in _____.
a) 1736-1744 b) 1740-1744 c) 1746-1763
2. The battle of Plassey was fought in _____.
a) 1764 b) 1757 c) 1765
3. The founder of the British Empire in India was _____.
a) Robert Clive b) Dupleix c) Mir Jafar
4. Count-de-Lally was defeated by Sir Eyre Coote at the battle of _____.
a) Madras b) St.Thomas c) Wandiwash

II) Fill in the blanks.

1. The capital of Carnatic was _____.
2. The Hero of Arcot was _____.
3. The Battle of _____ made the English East India company a sovereign power in India.

4. La Bourdonnais was the French Governor of _____.

III) Match the following.

- | | |
|-----------------------|-----------------------|
| 1. First Carnatic War | Treaty of Allahabad |
| 2. Third Carnatic War | Village near Calcutta |
| 3. Plassey | Aix – la – chappelle |
| 4. Battle of Buxar | Treaty of Paris |

IV) Answer in one word.

1. Name the treaty which was signed at the end of the First Anglo-Mysore war.
2. Who was made the Nawab of Bengal after the battle of Plassey?
3. When did the battle of Buxar take place?

V) Answer the following questions.

1. What do you know about Black Hole Tragedy?
2. Write any three causes for the success of the British in India.
3. What do you know about Robert Clive's Dual system of Government?
4. What were the causes for the First Anglo Mysore War?

VI) Answer in Detail.

1. Give an account of the causes, course and the results of the second and third Carnatic Wars.

Formative Assessment

1. On the outline map of India mark the important places of carnatic wars.
2. How did the enmity between the English and the French reflect in India?
3. The Battle of Plassey- A turning point in the history of India – Examine.
4. Debate on merits and demerits of Dual system of Government.
5. Prepare a Timeline chart on the treaties made during Anglo – French struggle for supremacy.
6. Discuss the causes for the success of British in carnatic wars.
7. How far the policies of the British paved way for the establishment of their supremacy in India?

RESOURCES

RESOURCES AND THEIR TYPES

Our planet Earth is made up of three major spheres. They are the Lithosphere or land, the Hydrosphere or water and the Atmosphere or the air that envelops the Earth. These three spheres together support the Biosphere or life sphere. These spheres provide humans with all their material requirements. Any material that is found in these spheres that is useful to man is called a **resource**. Resources play an important role in the economic development of a country.

Figure 1 helps us to understand the important natural resources of the Earth.



Figure 1 Natural Resources

Resources can be classified into different types based on different criteria.

On the basis of **development**, resources are classified into Potential resources and Developed resources. **Potential resources** are

those resources which have not yet been utilized by humans. For example, resources of Siberia and Antarctica. **Developed resources** are the resources which are used by humans. For example coal, iron ore etc.

On the basis of **renewability**, resources are classified into non-renewable or **stock** resources and renewable or **flow** resources. Today, we are concerned about resource depletion since the economic development of a nation depends on its resources. We will now examine in detail this category of resource in view of the depleting resources worldwide.

Non-renewable resources

Non renewable resources are exhaustible resources because nature has a fixed stock of these resources. They are consumed faster than nature can replace them. For example, minerals are mined or extracted from the Earth's crust and once extracted cannot be replaced. The minerals which are now being used extensively can be grouped into:

Metallic minerals or minerals that contain metals in their ore form .

Non metallic minerals or minerals that do not contain metals in their ore form.

Power minerals or minerals from which energy can be produced.

Of these minerals **power minerals** will be dealt with in detail as they play a very important role in the economic development of a country. It is required to run industries, homes and offices. The important power resources which are exhaustible in nature are coal, oil and natural gas and Nuclear minerals.

Coal

Coal is called a 'fossil fuel' because it was formed many million years ago. Large forests were buried in sedimentary basins by geological processes. Over time the buried plant matter got converted into coal due to pressure and heat. (Figure 2)

The important coal fields of the world are found in USA, Russia, Germany and the UK. In Asia, important coal fields are in China and India. In Tamil Nadu, coal is mined at Neyveli which has large reserves of lignite or brown coal. (Figure 3)

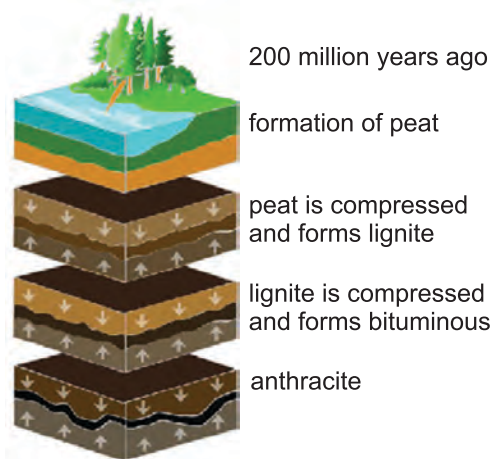


Figure 2 Formation of coal

Oil and Natural Gas

Oil is usually found in some strata of marine sedimentary rocks like mudstone, shale, sandstone etc (Figure 4) The remains of plants and calcareous animals (shelled animals) which were buried in the Earth, were subjected to heat and pressure. They changed into oil and this is found trapped in the pore spaces of the rocks. Natural gas, which is a lighter hydro-carbon, is found in the strata above the oil.

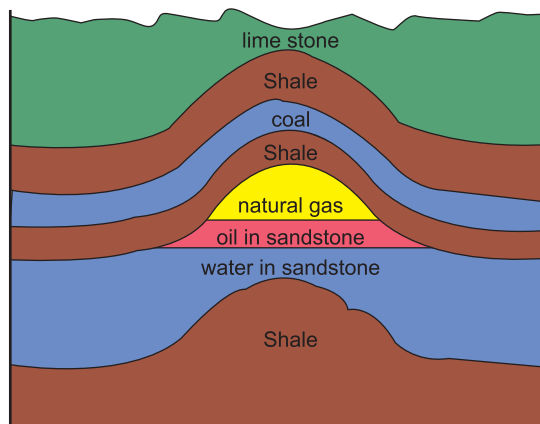


Figure 4 Formation of oil and Natural gas

Oil deposits may be found on-shore or in the land area as in South



Figure 5 Mumbai High oil Fields

Major Coal Fields of the World

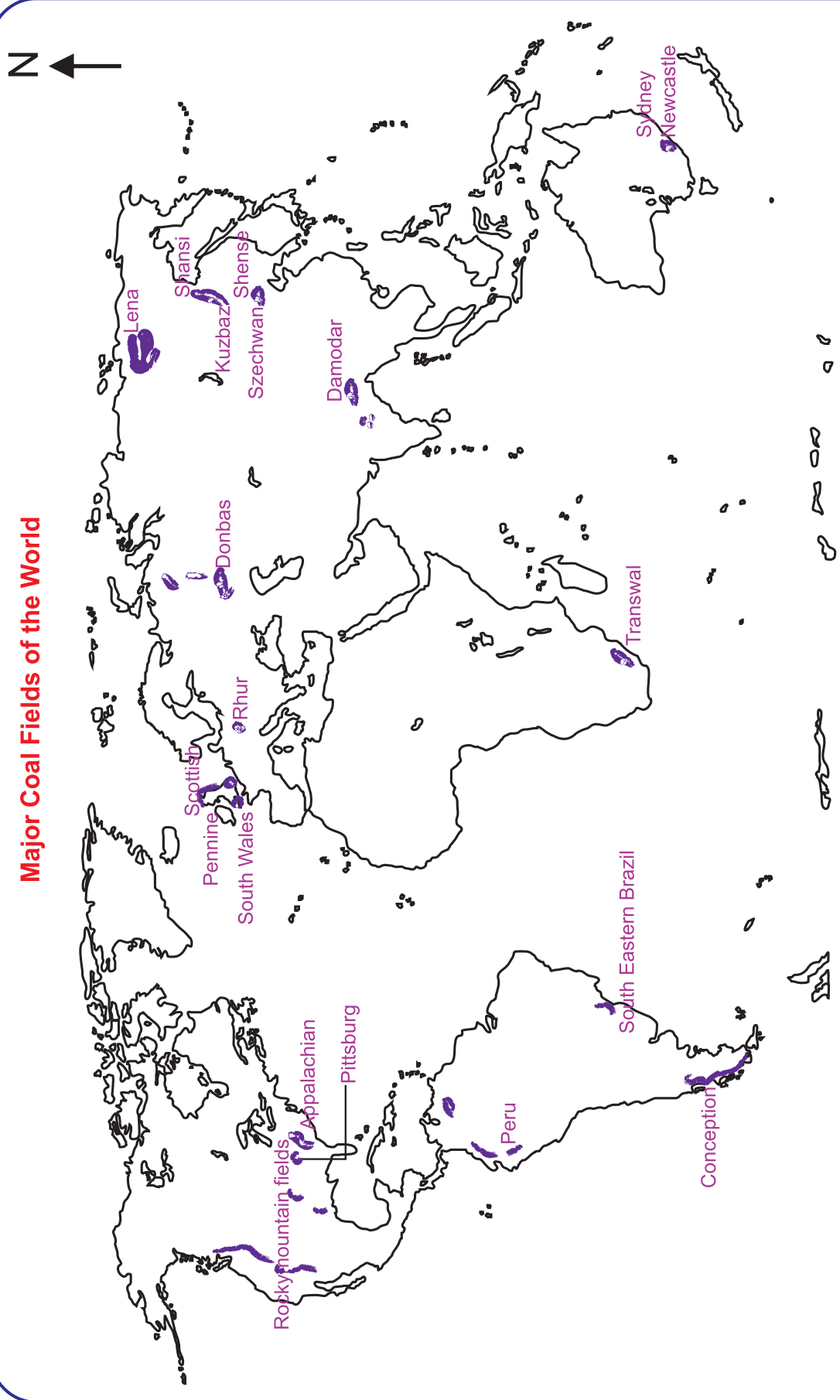


Figure 3

Major Oil producing regions of the World

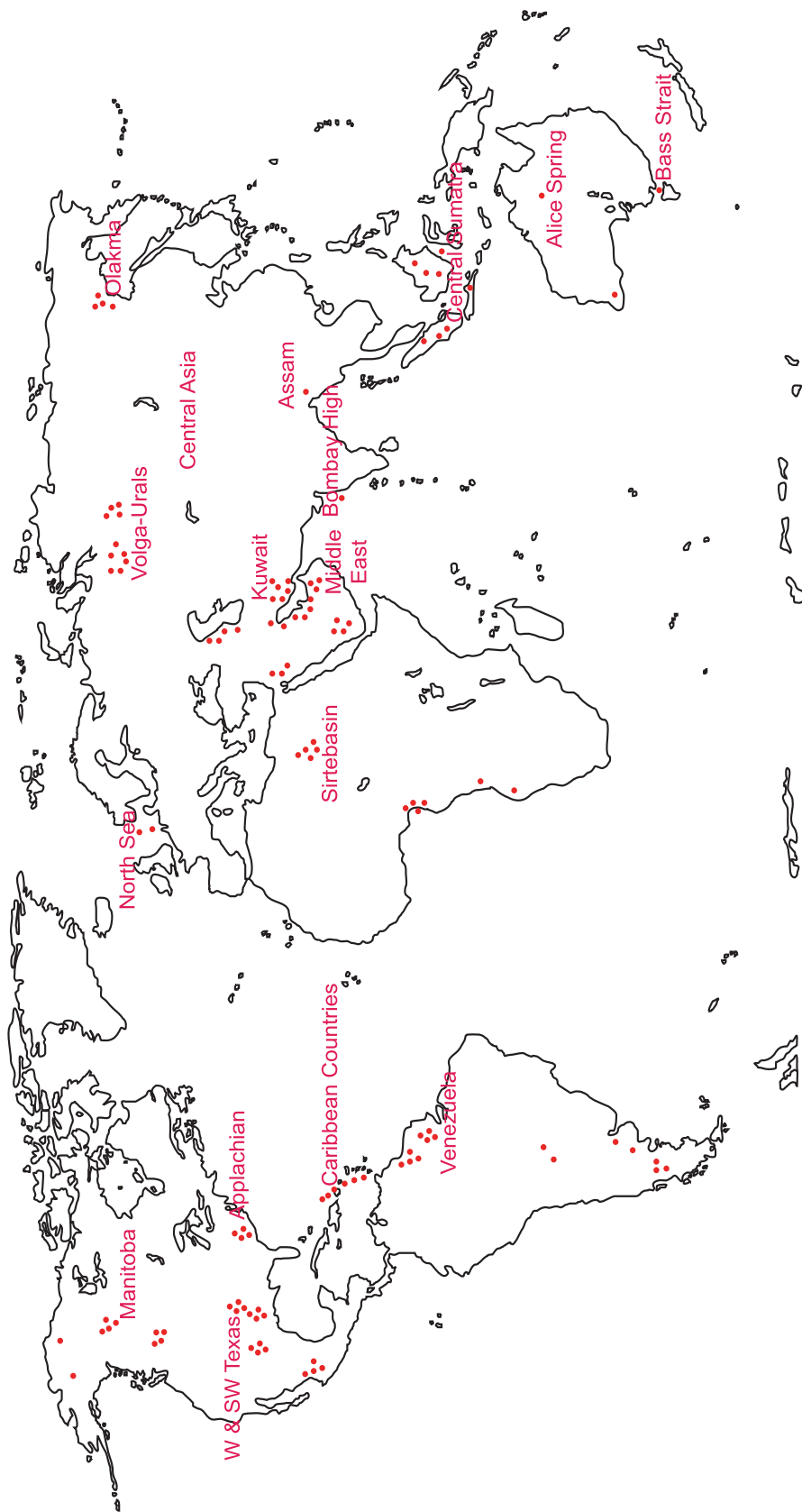


Figure 6

West Asia. It may also be found offshore in the continental shelves of the sea as in the North Sea (Figure.6). In India, major oil fields are found on shore in Assam. India's largest offshore oil field is in Mumbai High(Figure.5). There is potential to develop oil in Tamil Nadu in the Cauvery Basin.

Nuclear Minerals

Minerals like uranium and thorium are used to generate nuclear power. Rich deposits of Uranium are found in Namibia, Kazakhstan and Canada. In India, some of the coastal sands of Tamil Nadu and Kerala are rich in illminite. The USA is the world's largest producer of nuclear power, (30 % of worldwide nuclear generation of electricity). France is the largest user of nuclear power . (over 75% of its electricity is from nuclear energy).

(Source: <http://www.world-nuclear.org>)

Nuclear power plants in India

Madras Atomic Power Station, Rajasthan APS, Kaiga APS, Tarapore APS, Kakrapara APS, Narora APS.
(<http://www.npcil.nic.in/>)

Renewable Resource

Renewable resources are those which are infinite or are constantly renewed by nature. They continue to be available even after a part of it is consumed. For example, wind energy. The renewable sources of power are very important today.

Hydro-electric power

Hydro-electric power is the most developed source of renewable power. It is generated from falling water. Hydroelectric power is used extensively in many parts of the world where there are large rivers. The Three Gorges Dam across the river Yangtze in China is the largest hydro electric power project in the world (Figure 7a and 7b). In India, the Bhakra Nangal Dam is the largest source of Hydro-electric power.



figure 7a. Three Gorges Dam across the Yangtze

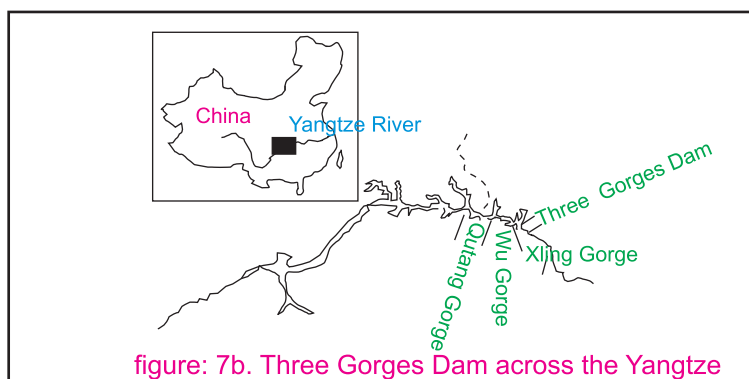


figure: 7b. Three Gorges Dam across the Yangtze

Solar Power

Solar energy, is used to light homes, buildings and heat water. Photovoltaic cells are required to store the sun's energy. Germany is the world's largest producer of solar power.

Tropical regions have enormous potential to develop solar power. But it has not been developed because of the high production cost of Photovoltaic cells. This cannot be afforded by the developing countries in the tropical regions.

Wind Energy

Wind energy is generated by using the wind to run turbines in areas where there is a constant flow of wind. Europe is a major user of wind energy. Twenty percent of Denmark's electricity comes from wind power.

(Source: World Wind Energy Association 2010)

In India, Maharashtra and Tamil Nadu have developed wind energy.

Aralvaimozhi, a wind farm located in Kanyakumari district in Tamilnadu is the world's largest wind farm (Figure 8).



Figure 8 Windmills at Aralvaimozhi

Biomass

The main sources of biomass are trees, crops and agricultural and animal wastes. Among these, wood fuel is the most important in the developing countries. Gobar gas or methane is generated from cow manure. Biofuels are now being produced from crops like sugarcane and Jatropha (Figure 9).



Figure 9. Jatropha plant from which biodiesel is obtained

Conservation of Resources

Since human life and progress is dependent on the Earth's natural resources, man must learn to use these resources wisely. He must learn to manage the non-renewable resources with care, since they cannot be replaced. He must utilize the renewable resources for which extensive research and development are essential.

Man depends on resources for his living. The type of resources available in a place determines his occupation. We will see this in the following lesson .

EXERCISE

I) Fill in the blanks.

1. A material which is found in nature and is useful to human is called a _____.
2. Minerals once extracted cannot be _____.
3. _____ play a very important role in the economic development of a country.
4. Uranium is a _____ mineral.
5. _____ have enormous potential to develop solar power.

II) Choose the correct Answer.

1. Resources already in use by humans are called _____.
a) Developed b) Potential c) Flow resource
2. Minerals are _____ resource.
a) Renewable b) non-renewable c) Biotic
3. A major user of wind energy in the world is _____.
a) Europe b) South America c) Antarctica
4. Type of coal mined in our state is _____.
a) Lignite b) Anthracite c) Graphite
5. The largest hydro electric power project of India is _____.
a) Bakra Nangal b) Mettur c) Damodar

III) Match the following.

- | | |
|---------------------|---------------|
| 1. North Sea | Nuclear power |
| 2. Aralvaimozhi | Oil fields |
| 3. Oil and Coal | Yangtze |
| 4. Three Gorges dam | Fossil fuel |
| 5. Thorium | Wind farms |

IV) Write Brief Answers.

1. Define a) Non-Renewable Resources b) Potential Resources.
2. Write about wind energy.
3. Why should we use resources wisely?

V) Answer the following questions in detail.

1. Explain the formation of coal and oil.
2. Write an account on renewable resources

Formative Assessment

I. Activity:

Classify the following items into two categories as Natural Resources and Human made resources and paste pictures against each item.

- | | |
|-----------------|-------------------------|
| 1. Land | 2. Houses |
| 3. Vegetation | 4. Machines |
| 5. Coal | 6. Nuclear minerals |
| 7. Buildings | 8. Factories |
| 9. Wind | 10. Fishes |
| 11. Computers | 12. Rivers |
| 13. Water | 14. Minerals |
| 15. Soil | 16. Synthetic materials |
| 17. Mountain | 18. Sea |
| 19. Wild life | 20. Railway lines |
| 21. Solar power | 22. Birds |

II. Model: Make a model and write a report.

- | | |
|-----------------------|--------------------|
| 1. Formation of coal. | 2. Wind mill model |
|-----------------------|--------------------|

III. Life skill:

Suppose you are going to enjoy your vacation of 15 days in an another place with your family. What will you do just before you lock the door? Put mark or mark according to the option.

- | | |
|--|--------------------------|
| 1. Ignore everything and keep moving with your family members happily to enjoy the travel. | <input type="checkbox"/> |
| 2. Switch off all the appliances (kitchen appliances, computer etc). | <input type="checkbox"/> |
| 3. Closing all the taps and water pumping motor connections. | <input type="checkbox"/> |
| 4. Will you check the vehicles like motorbike or car with its fuel tank safe? | <input type="checkbox"/> |
| 5. Switch off all the lights, fan and television points. | <input type="checkbox"/> |
| 6. Ask your mother or father to check all the above. | <input type="checkbox"/> |

IV. Map Skill:

1. Mark the important oil producing countries of the world on a world map.

V. Collect Pictures:

1. Collect pictures of wind farms of India and Netherlands.