**GEOGRAPHY SS 1**

**THIRD TERM**

**SCHEME OF WORK**

**WEEK TOPIC**

1-2 Nigeria: Location, Position and Size

3 Nigeria: Physical: Relief and Drainage,

4 Nigeria: Climate

5 Nigeria: Vegetation and Soils

6 Nigeria: Transportation and Industries

7 Nigeria: Population

8 Nigeria: Agriculture

9 Nigeria: Mineral Resources

10 Nigeria: Power Resources

**REFERENCE**

Essential Geography for Senior Secondary Schools by O.A. Iwena

**WEEK ONE AND TWO**

**NIGERIA: LOCATION, POSITION AND SIZE**

**LOCATION:** Nigeria is located between 4 0 N and 14 0 N of the Equator, and between 30E and 150 E of the Greenwich Meridian. Note that since Nigeria is located between Latitudes 40 Nand 14 0 N, the latitudinal extent of Nigeria is 10 0 i.e. 15 0 – 4 0, while her longitudinal extent is 12 0 i.e. 15 0 – 3 0

**POSITION:** The position of Nigeria refers to part of the continent Nigeria is found. Nigeria is in Africa (West Africa). She is bounded in the North by Niger Republic, in the North - East byChad Republic, in the East by Cameroon Republic, in the South by Atlantic Ocean, and in the West by Benin Republic. Nigeria is bounded by French speaking (Francophone) West African countries.

Niger

Rep.

Chad

Rep.

Benin

Rep. Cameroun Rep.

Atlantic Ocean.

**SIZE:** Nigeria is the fourth largest country in West Africa in terms of land area after Niger Republic, Mali and Mauritania. The total land area of Nigeria is approximately 923, 768 sq km. The greatest distance from east to west is approximately 1,300 km while from north to south is about 1,100 km. In terms of population, Nigeria is the most populous single country in Africa with a population of over 140 million according to the 2006 population census. Hence, she is often referred to as “The Giant of Africa”.

**EVALUATION**

1. Describe the location of Nigeria.
2. State the countries that bounds Nigeria.

**POLITICAL DIVISION:** Nigeria came into existence in 1914 when the Northern and Southern protectorates was amalgamated; she had her independence in 1960, precisely 1st October, 1960. Prior to this time, Nigeria was governed by colonial masters which include:-

* Sir Fredrick Lord Lugard. (1912 – 1919)
* Sir Hurge Clifford (1919 – 1925)
* Sir Creamer Thompson (1925 – 1931)
* Sir Donald Cameroon (1931 – 1935)
* Sir Bernard Boundillion (1935 – 1943)
* Sir Anthony Richard (1943 – 1948)
* Sir John McPherson (1948 – 1958)
* Sir James Robertson (1958 – 1960)

**READING ASSIGNMENT**

Nigeria politically is divided into 36 State with the FCT. Each of the State has a slogan or title which can also be used for identifying the state.

The States include the following:-

|  |  |  |  |
| --- | --- | --- | --- |
| **Nos.** | **STATE** | **CAPITAL** | **TITLE / SLOGAN** |
| 1 | Abia | Umuahia | God’s own State |
| 2 | Adamawa | Yola | Highest peak of the Nation |
| 3 | Akwa Ibom | Uyo | Land of promise |
| 4 | Anambra | Awka | Home for all |
| 5 | Bauchi | Bauchi | Pearl of Tourism |
| 6 | Bayelsa | Yenagoa | The glory of all lands |
| 7 | Benue | Makurdi | Food basket of the Nation |
| 8 | Borno | Maiduguri | Home of peace |
| 9 | Cross River | Calabar | The peoples paradise |
| 10 | Delta | Asaba | The big heart |
| 11 | Ebonyi | Abakaliki | Salt of the Nation |
| 12 | Edo | Benin | The heart beat |
| 13 | Ekiti | Ado-Ekiti | Fountain of knowledge |
| 14 | Enugu | Enugu | Coal city State |
| 15 | Gombe | Gombe | Jewel of the Savannah |
| 16 | Imo | Owerri | Land of hope |
| 17 | Jigawa | Duste | The new world |
| 18 | Kaduna | Kaduna | Liberal State |
| 19 | Kano | Kano | Centre of commerce |
| 20 | Katsina | Katsina | State of hospitality |
| 21 | Kebbi | Birnin Kebbi | Land of equity |
| 22 | Kogi | Lokoja | The confluence State |
| 23 | Kwara | Ilorin | State of Harmony |
| 24 | Lagos | Ikeja | Centre of excellence |
| 25 | Nasarawa | Lafia | The home of solid mineral |
| 26 | Niger | Minna | The power State |
| 27 | Ogun | Abeokuta | The Gateway State |
| 28 | Ondo | Akure | The sunshine state |
| 29 | Osun | Oshogbo | State of living spring |
| 30 | Oyo | Ibadan | The pace setter state |
| 31 | Plateau | Jos | Home of peace and tourism |
| 32 | Rivers | Port-Harcourt | Treasure base of the nation |
| 33 | Sokoto | Sokoto | Seat of the Caliphate |
| 34 | Taraba | Jalingo | Nature’s gift to the nation |
| 35 | Yobe | Damaturu | The young shall grow |
| 36 | Zamfara | Gusau | Home of Agric. Products |
| 37 | FCT | Abuja | Centre of unity |

**EVALUATION QUESTIONS**

1. Nigeria is located on lat………?

2. Nigeria is bounded in the north and south by ……… and…………….

**GENERAL EVALUATION QUESTIONS**

1. …….. State is regarded as the heart- beat of Nigeria?
2. Describe the location of Nigeria.
3. State the countries that bounds Nigeria.
4. What is a scale?
5. State the types of scale.

Reading Assignment: Essential Geography, O.A. Iwena Pages 229-230.

**WEEKEND ASSIGNMENT**

1. The latitudinal extent of Nigeria is (a) 100 (b) 120 (c) 140 (d) 150

2. Nigeria is bounded in the west by (a) Cameroon (b) Niger Republic (c) Benin Republic (d) Chad

3. Nigeria has a total land area of (a) 937, 682 sq km (b) 910, 230 sq km(c) 932,768 sq km

(d) 923, 768 sq km

4. The first military head of state to govern Nigeria after independence was

(a) Gen. Ibrahim Babangida (b) Gen. Aguiyi Ironsi (c) Gen. Muritala Mohammed

(d) Gen. Olusegun Obasanjo

5. Which of these states is known as the home of solid mineral? (a) Niger (b) Plateau

(c) Nasarawa (d) Oyo

**THEORY**

1. Write short note on the location of Nigeria.

2. Draw the map of Nigeria showing all the 36 states with the FCT.

**WEEK THREE**

**NIGERIA: RELIEF & DRAINAGE**

Relief refers to the surface features of the land above the sea level. The relief of

Nigeria can be grouped into two main classes. These are lowlands and highlands.

**LOWLANDS:** These are areas below 300m above the sea level. Areas of lowlands in Nigeria include the following.

(i) The Sokoto Plain (200 – 300m)

(ii) The Niger – Benue Trough / Valley (100 – 300m)

(iii) The Chad Basin or Bornu Plain

(iv) The Niger Delta (0 – 100)

(v) The Cross River Basin (120 – 180)

(vi) The Coastal Plain (0 – 100)

(vii) The interior coastal lowland of western Nigeria (100 – 300m)

**ROCKS ASSOCIATED WITH LOWLANDS**

(i) The coastal plain: Sedimentary rocks of alluvial deposit.

(ii) Niger – Benue Trough: Sedimentary rocks such as limestone, sandstone and shale.

(iii) Sokoto plain – Sedimentary rocks like sand, clay, sandstone and limestone.

(iv) Chad basin – Sedimentary rocks of sand and clay.

Rocks generally known to be associated with lowlands are sedimentary rocks.

**IMPORTANCE OF LOWLANDS**

(1) Plains, especially level ones are good for human habitation. Population and settlement are

usually concentrated on plains

(2) Some plains are rich sources of minerals like petroleum, coal, etc.

(3) Plains, especially depositional plains are very fertile for agriculture.

(4) Plains, since they are level, favours communication such as roads, railways, and airports.

(5) rivers and plains (basin) provides jobs e.g fishing.

(6) Rearing of animals are also better done on level grounds.

(7) Some plains have rivers which provide water for so many purposes.

**DISADVANTAGES OF PLAINS**

(1) Some plains especially in delta areas may be flooded with water. Flooding is an environmental hazard.

(2) Some plains may pose serious barrier to communication, especially in flooded areas.

**EVALUATION**

1. What is relief?

2. Mention any three lowland areas in Nigeria.

3. Give two importance of lowlands/plains to man.

**HIGHLANDS:** These are areas that are over 300m above the sea level. Areas of highlands in Nigeria and their height include the following:-

(i) The North-Central highlands (ii) The Western highlands

(iii) The Eastern highlands (iv) The Eastern scarpland

**THE NORTH-CENTRAL HIGHLANDS**

This lies in the centre of Northern Nigeria around Kano, Kaduna Bauchi, Jigawa and Plateau State. The most important highland in these areas is the Jos Plateau (200 – 1500m). Rivers like Hadeija, Kaduna, and Sokoto etc. take their sources from Jos Plateau. The highest point of Jos Plateau is Shere Hills (1650m).

**THE WESTERN HIGHLANDS**

This is found in the Western part of Nigeria around Ondo, Oyo, Kwara, and Osun State. Important hills in this area include the following:-

(i) Idanre hill (950m) (ii) Apata hill (400 – 700m)

(iii) Epeme hill (350 – 600m)

Three important rivers have their sources from these highlands. They are river Ogun, Osun and Osse.

**THE EASTERN HIGHLANDS**

This is found in the border between Nigeria and Cameroun. They have the highest mountain in Nigeria. They include:-

1. Mandara Mountain (1200 – 1500m)
2. (ii) Biu Plateau (800 – 1000m)
3. Adamawa Mountain (1800 – 2400m)
4. (iv) Alantika and Shebshi Hills (1600 – 2000m)

(v) Obudu and Oban hills (1200m)

Rivers found in these areas are River Gana, Ngodo and Yedseram which flow to Lake Chad.

**THE EASTERN SCARPLAND**

This is found within the eastern region especially around Enugu and Nsukka. The only major highland found in this area is the Udi Nsukka plateau (300 – 600m). Important rivers include Anambra, Imo and Cross River.

**ROCKS ASSOCIATED WITH HIGHLAND**

(i) North central plateau, Western highland, Mandara Mountain, Shebshi, Alantika, Obudu and Oban hills are made up of basement complex rocks (a combination of igneous and metamorphic rocks).

(ii) Jos plateau is made up of volcanic rocks.

(iii) Udi hills are made up of Carboniferous sedimentary rock.

**IMPORTANCE OF HIGHLANDS**

1. Sources of mineral.

2. Formation of rainfall, especially orographic rainfall.

3. It is used for defence in times of war.

4. It serves as Windbreaks.

5. They are good source of rivers.

6. The rivers provide site for construction of Hydro-Electric Power (HEP).

7. They provide tourist centers.

8. They are used for transhumance.

**DISADVANTAGES OF MOUNTAINS**

1. Barriers to communication.

2. Mountains promote soil erosion.

3. Mountains occupy good land that would have been used for other purposes.

4. They prevent human habitation.

5. Mountainous soils are poor in nutrients therefore are not good for agriculture.

**EVALUATION QUESTIONS**

**1.** The highest hill in the north- central highlands is the …..?

**2.** Mention three uplands in the Eastern highlands.

**NIGERIA: DRAINAGE**

Drainage refers to water bodies like rivers and lakes.

**RIVERS IN NIGERIA**

Nigeria is drained by two main rivers – River Niger and River Benue. River Niger is the largest river in Nigeria and it has its source from Guinea highlands in Guinea. It passes through Mali and Niger Republic to Nigeria and empty itself in the Atlantic ocean.

River Benue has its source from the eastern highlands and joins River Niger at Lokoja. Lokoja, because of this, is known as confluence town. Other rivers in Nigeria take their sources from highlands in Nigeria known as Hydrological centers. These are:

(i) Western Highlands: They have rivers such as Ogun, Osun and Osse.

(ii) North-Central Highlands: They have rivers such as Kaduna, Hadeija, Zamfara, Yobe, Gana, Gongola and Rima.

(iii) Eastern Highlands: They have rivers such as Donga and Katsina-Ala.

(iv) Eastern Scarplands: They have rivers like Anambra and Cross River.

**CHARACTERISTIC OF NIGERIAN RIVERS**

1. The volume of the rivers changes with seasons. It increases during the rainy season and reduces during the drying season.

2. Presence of rapids and cataract. This impedes inland navigation.

3. Presence of debris like dead leaves, mud, wood, etc.

4. Short courses with high speed.

5. Specific direction of flow. Rivers in the south flow in the north-south direction while rivers in the north flows in a radial pattern to different directions.

6. Shallowness.

7. The colour changes with season.

8. Seasonality: Most rivers flow during the rainy season and stop or reduce flowing to flow during the dry season.

**IMPORTANCE OF NIGERIA RIVERS**

1. Medium of transportation. 2. Generation of Hydro-Electric Power (H.E.P).

3. Irrigation purposes. 4. Domestic uses.

5. Industrial uses. 6. Provision of employment.

7. Recreation/Tourism. 8. Source of food supply (fishes, etc).

**EVALUATION QUESTIONS**

1. Mention the three major rivers that took their sources from the western highlands.

2. Mention 3 characteristics of Nigerian rivers.

**RIVER BASIN**

River basin refers to the area generally drained by a river. River basin is also known as catchment area. In Nigeria, there are five major river basins. These are:-

(i) The Niger basin (ii) The Benue basin

(iii) The Chad basin (iv) The Cross River basin

(v) The South Atlantic basin

The rivers in these basins are grouped into 3 classes:

1. Long rivers with large basin e.g. River Niger and Benue.

2. Short rivers with small basin e.g. River Osun, Ogun, Cross River etc.

3. Rivers in basins of inland drainage: These are rivers that do not reach the sea but rather flow into Lake Chad. Examples are River Yobe, Hadeija, Gana and Yedseram.

**IMPORTANCE OF RIVER BASIN**

1. Good site for settlement.

2. Provision of suitable lands for agricultural purposes.

3. Medium of communication due to the presence of rivers.

4. Presence of some mineral deposits.

5. Provision of water.

6. Provision of sites for fishing.

**LAKES IN NIGERIA**

A lake is a body of water surrounded by land. The lakes are grouped into two major types:

1. Man/Made or Artificial lakes: They are lakes constructed by man e.g. lake kainji on River Niger and Shiroro lake on River Kaduna.

2. Natural lake: These are lakes which exist naturally e.g. Lake Chad.

**GENERAL EVALUATION QUESTIONS**

1. What is a basin?
2. What is a lake?
3. State the features of Nigeria rivers.
4. State the importance of river basin.
5. Explain the solar system.

**READING ASSIGNMENT**

Essential Geography, O.A. Iwena Pages 234-236.

**WEEKEND ASSIGNMENT**

1. Lowlands refer to places that are below \_\_\_\_\_\_\_\_ above the sea level. (a) 800m

(b) 500m (c) 300m (d) 100m

2. The rock types found in most lowland is (a) Igneous rocks (b) Sedimentary rocks

(c) Metamorphic rocks (d) calcorious rock

3. Which of these hills is found in the Eastern Scarpland (a) Idanre hill (b) Apata Hill

(c) Oban Hill (d) Udi Hill

4. Which of these rivers is sourced from the North-Central highlands (a) Imo (b) Ogun

(c) Hadeija (d) Osse

5. Which of these hills is composed of volcanic rocks (a) Jos Plateau (b) Epeme hill (c) Udi hill (d) Mandara hill

**THEORY**

1. List three importance of lowlands.

2. Write one natural lake and one artificial lake.

**WEEK FOUR**

**NIGERIA: CLIMATE**

Climate is the average weather condition of the atmosphere over a long period of time usually about 30-35years.

FACTORS AFFECTING CLIMATE

1. Latitude

2. Altitude

3. Distance from the sea

4. Ocean currents etc.

**Elements of climate**

1. Temperature
2. Rainfall
3. Wind
4. Relative humidity
5. Pressure
6. Cloud cover
7. Sunshine

**EVALUATION**

1. What is climate?
2. State the elements of climate.

(i) **Temperature**: It is the degree of hotness and coldness of a place. Temperature in Nigeria is not uniform and has the following characteristics:

a). It varies from place to place: Temperature is low in the south with an average temp. of about 24oC because of the cooling effects of the Atlantic ocean, while it is high in the north due to the effects of the Sahara desert or distance from the sea.

b) It varies with altitude(height): places in Nigeria with high altitude like Jos plateau, obudu etc have lower temperature(20oC) while the surrounding lowlands experience high temprature(of over 27oC).

c) It varies with seasons: During raining seasons, temperature are usually higher in the north but lower in the south during dry season due to the effects of harmatan.

d) Variation in annual range: The annual range of temperature in the south varies from 2-3oC while that of the north is about 9oC.

(ii) **Wind**: Wind is defined as air in motion. Nigeria is characterised with four types of wind which are:

a) **The Tropical Maritime Airmass (south-west trade wind):** This wind comes from the Atlantic Ocean and it brings about raining season to southern parts of Nigeria, especially around Warri and Port-Harcourt with twelve months of continuous rainfall. Raining season in the south starts from March- October, with a short dry season at August called AUGUST BREAK.

b) **Tropical Continental Airmass (north – east trade wind)**: This trade wind is responsible for dry season in northern parts of Nigeria. It comes from the Sahara desert. It is cold, dusty and dry hence, it does not bring rain but it brings a very cold, dusty and dry weather called harmattan. It starts from November and ends around February.

c) **Equatorial Easterlies:** This wind blows around the equator from the east. It has some influence on the N.E AND S.W trade winds when they meet.

d) **Land and sea breeze:** these local winds are restricted to the coast of Lagos, Warri, Port Harcourt, e.t.c. These are local winds which blows alternately between land and sea on daily basis

**SEASON**

There are two types of seasons in Nigeria. The two seasons are wet and the dry season. During dry season, the tropical continental air mass and the south westerly wind influence the whole of Nigeria.

During the dry season, most parts of the country is influenced by the tropical continental air mass.

Rainfall :- Rainfall in Nigeria is unevenly distributed. It generally increases from the coast inland. Along the coast, rain falls for about 8 to 12 months of the year. Further inland, the period of rainfall decreases to less than six months. The shortest periods of rainfall are to the northwest and northeast, where rain falls for less than four months of the year.

The mean annual rainfall varies from about 2000mm along the coast to less than 600mm in the northern part of the country.

**Insolation and Sunshine**

Insolation is generally high throughout the year in Nigeria. Relatively less amount of insolation is received in the south where cloud cover is thicker than in the north where clouds are less. The highest amount of insolation is received in the north. Sunshine hour are less in the raining season than in the dry season.

**Relative Humidity**

Relative Humidity decreases towards the North, Humidity is higher in the south than in the north. Humidity is also higher in the raining season than in dry season.

**EVALUATION**

1. Explain factors affecting temperature.

2. Describe the temperature of Nigeria.

**GENERAL EVALUATION QUESTIONS**

1. What is weather?
2. What is climate?
3. Differentiate between weather and climate.
4. State the elements of weather and climate.
5. State factors that can affect the weather and climate of a place.

**READING ASSIGNMENT**

Essential Geography, O.A. Iwena Pages 238-242.

**WEEKEND ASSIGNMENT**

1. The largest river in Nigeria is (a) Nile (b) Benue (c) Niger (d) Ogun

2. Which if these towns is a popular confluence town in Nigeria (a) Jos (b) Lokoja (c) Osun

(d) Udi

3. Which of these rivers flow into Lake Chad (a) Ogun (b) Gana (c) Cross River (d) Osse

4. Which of these is a natural lake in Nigeria (a) Shiroro lake (b) Lake Chad (c) Lake Kanji

(d) Lake Tanganyika

5. River Niger has its source from (a) Niger State (b) Adamawa Highlands (c) Guinea Highlands (d) Sokoto State

**THEORY**

1. List four effects of climate.
2. Nigeria experiences which type of season?

**WEEK FIVE**

**NIGERIA: VEGETATION AND SOILS**

**VEGETATION OF NIGERIA**

The vegetation of Nigeria can be grouped into three major zones and these are:

1. Forest zone/vegetation: This zone contains mainly trees and it is sub-divided into

(a) Mangrove swamp forest: Salt and fresh water swamp.

(b) Rain forest

1. Savanna zone/vegetation: This zone is made up of mainly grasses and it is further sub-divided

into three which are

(a) Guinea savanna

(b) Sudan savanna

(c) Sahel savanna

1. Montane vegetation: This is mainly found in highland areas such as Jos and Adamawa.

**EVALUATION**

1. What is vegetation?
2. Describe the vegetation pattern of Nigeria

SOILS IN NIGERIA Soil is defined as the thin surface of the uppermost layer of the earth’s crust on which plants grow.

Soils in Nigeria can be grouped into four major zones which are:

1. Zone of laterite soil
2. Zone of forest soil
3. Zone of sandy soil
4. Zone of alluvial soil

**ZONE OF LATERITE SOIL**

These are found in the interior zone of Nigeria in places such as Jos, Markurdi, M inna, Enugu, Abuja etc. The soils are associated with guinea savanna and it is heavily leached due to rainfall. The soils are usually reddish in colour due to the presence of iron.

**ZONE OF SANDY SOIL**

These soils are found in the extreme northern part of Nigeria like Sokoto, Katsina, Kano, Damaturu, Maiduguru etc. T he soils are associated with sudan and sahel savanna. These soils are formed due to dryness and depositing of sand by wind.

**ZONE OF FOREST SOIL**

This is found in the southern belt and south-western part of Nigeria in places like Ibadan, Akure, Benin City, Ogun, Anambra, Imo etc. The soil is associated with forest vegetation and it is rich in humus due to fallen and decayed leaves

**ZONE OF ALLUVIAL SOILS**

This is found around Ilorin, Lokoja, Niger-Delta areas of Warri, Port-Harcourt and Calaber. The soil is associated with fine alluvial soil deposits at the lower course of a river.

**EVALUATION**

1. List the zones of soils in Nigeria.
2. Describe laterite soil.
3. How is alluvial soil formed?

##### GENERAL EVALUATION QUESTIONS

1. Define soil.
2. Mention three types of soil.
3. Describe the zone of laterite soil.
4. Describe the solar system.
5. State the characteristics of Jupiter.

**READING ASSIGNMENT**

Essential Geography, O.A. Iwena Pages 243-247.

**WEEKEND ASSIGNMENT**

1. The best soil for planting is ……..soil (a) sandy (b) clayey (c) loamy

2. Sandy soil is more dominant in which of the following areas? (a) Warri (b) Lagos

(c) Kano

3. Laterite soil is more dominant in which of the following areas? (a) Makurdi (b) Lagos

(c) Kano

4. Savanna vegetation is characterized with (a) trees (b) grasses (c) raffia palms

5. Soil porosity is highest in ……… soil (a) sandy (b) loamy (c) clayey

**THEORY**

1. Define soil erosion.
2. Mention three areas of wind erosion in Nigeria.

**WEEK SIX**

**NIGERIA: TRANSPORTATION AND INDUSTRY**

**TRANSPORTATION IN NIGERIA**

Transportation is defined as the movement of people, goods and commodities from one place to another either by land, water or by air.

**TYPES OF TRANSPORTATION**

**A. LAND TRANSPORT:** This is the movement of people and goods from one place to another by land. Means of transportation by land include:

**Human portage:** This involves the use of human legs for movement i.e. trekking. This is basically applicable where the distance is not much.

**Animal portage:** This involves the use of certain animals like horse, donkey, camel, etc for movement. This is very common in the northern part of Nigeria.

**Road transport:** This involves the use of motor cars, buses, motor cycles, Lorries and trucks for movement.

**In Nigeria, there are 3 types of roads:**

**(i) Trunk A Road:** These are roads constructed and maintained by the federal government. They are dual carriage or express roads linking federal and State capitals. E.g. Lagos – Ibadan, Warri – Benin, Onitsha – Enugu, Kaduna – Zaria express road.

**(ii) Trunk B Roads:** Are roads constructed and maintained by the state government. They link different areas within a state. E.g. Ikeja – Ojota, Ogba – Oshodi, Mile 2 – Badagry, etc.

**(iii) Trunk C** **(local) roads:** are roads constructed and maintained by the local government. In most cases, these roads are not tarred.

**Advantages of Road transportation**

(1) It is the most common means of transportation.

(2) It provides door- to- door services.

(3) It makes goods available where they are scarce.

(4) It feeds water, rail and air transportation.

**Disadvantages of Road Transportation**

(1) Roads are very expensive to construct and maintain.

(2) Road is difficult to construct especially in the rainy season.

(3) Amount of goods and passengers carried by road is limited.

(4) Roads are more prone to accident than any other means of transportation

(5) They require adequate maintenance on a daily basis.

**Limitations of Road Transportation**

(1) Presence of high lands and other rugged relief.

(2) Presence of swampy areas.

(3) Soil erosion caused by heavy rain.

(4) Lack of finance to construct and maintain the roads.

**Solutions**

(1) Roads should be constructed on lowlands, passes or gaps around mountain areas.  
(2) Construction of flyovers in marshy areas.

(3) Construction of bridges across rivers.

(4) Fund should be provided for road maintenance.

**Rail Transport**: This is transportation by rail i.e the use of Trains. Nigeria uses mostly narrow gauge railway lines.

**Advantages of Rail Transport**

(1) It is most convenient means of transporting bulky goods.

(2) It is cheap.

(3) It can move people and goods over a very long distance.

(4) It helps to open up new lands.

**Disadvantages of Rail Transport**

(1) It involves high cost of construction and maintenance.

(2) It is very slow (the slowest), and therefore not suitable for transporting perishable goods.

(3) Constant stopping in each station and changing of passengers waste a lot of time.

(4) It depends on roads to feed it with passengers.

**Limitations of Rail Transport**

(1) Rail transport is too slow.

(2) It has very low patronage and high competition with other forms of transport.

(3) Lack of spare parts, narrow gauge with single tracks.

(4) Inadequate funding.

(5) Lack of technical know-how.

**Solutions**

(1) Modern rail system with wide gauges and multiple tracks should be developed.

(2) People should be trained on rail maintenance.

(3) Rail transport should be properly funded.

(4) Spare parts should be made available.

(5) Railway fare should be cheap to attract passengers

**EVALUATION**

1. Mention the types of transport.
2. State the different types of road transport.

**B. AIR TRANSPORT**: This is movement of people, goods and services from one place to another by air. It involves the use of airplanes, helicopters, jets and rockets. We have 2 types of Airports. (i) International Airport and (ii) Local / Domestic Airports.

International Airports are airports where planes that fly outside the country can take off or land e.g. Muritala Mohammed International Airport (Lagos), Abuja International Airport (Abuja), Port Harcourt International Airport (PH).

Domestic (Local) Airports on the other hand are airports where planes that fly within the country i.e. from one state to another can take – off or land.

**Advantages of air transport**

(1) It is the fastest means of transport.

(2) It uses direct route.

(3) It can reach anywhere provided there are landing facilities.

(4) Airplanes can cross mountain, dense forest and large ocean with ease and great speed.

(5) Urgently required Medicare supplies, machine parts, express mails, etc are easily dispatched by air planes.

**Disadvantages of air transport**

(1) It is expensive to operate and maintain, especially the aircraft and airport facilities.

(2) It is very expensive (the most expensive).

(3) It is easily affected by bad weather, which makes visibility very poor.

(4) There is problem of safety as incidence of plane crashing and hijacking is becoming very common.

**Limitations of air transport**

(1) There is limited capital to construct airport

(2) There is problem of inadequate spare parts.

(3) Weather hazards.

(4) There is problem of low patronage due to its expensive nature.

(5) There is also the problem of poor management and inadequate security.

**Solutions**

(1) Loans should be sourced for the proper maintenance of airports and airplanes.

(2) Spare parts should be procured.

(3) Efficient management should be adapted.

**EVALUATION**

1. State the advantages of air transport.
2. What are the factors limiting the use of air transport?

**C WATER TRANSPORT:** This is the movement of people, goods and services by water.

Water transport is divided into 2 parts

(i)Ocean navigation

(ii) Inland water navigation.

Ocean navigation involves transportation by water between Nigeria other countries using the Oceans especially along the coast line, while inland water navigation involves navigation along the creeks, lakes, lagoons and rivers in Nigeria.

**Advantages of water transport**

(1) It is the cheapest means of transport between countries.

(2) The ocean is free for all Nation to use.

(3) It is used to move bulky goods from one country to another during international trade.

(4) Cost of construction and maintenance is low and only restricted to ships and ports.

(5) It is good for transporting goods over a long distance.

(6) It is relatively safe.

**Disadvantages of water transport**

(1) It is the slowest means of transportation when compared to Air and Land transport.

(2) Cost of acquiring a ship is very high.

(3) Cost of ship parts, construction and maintenance is high.

(4) Lack of technical know-how

**Limitations of water transportation**

(1) Presence of waterfalls, rapids and cataracts limit the use of rivers.

(2) Presence of floating vegetation.

(3) It is only useful in countries with coastlines and parts as against landlocked countries with no oceans or seas

(4) Seasonality of most rivers is a problem.

(5) Shallowness of most rivers is also a problem.

(6) There is also problem of sea sickness.

(7) Limited capital to construct seaports

**Solutions**

(1) Rivers should be dredged regularly

(2) Loans should be granted to construct and maintain seaports.

(3) Medical facilities on board should be improved.

(4) Construction of canals to bypass waterfall and cataracts.

**CONTRIBUTIONS OF TRANSPORTATION TO THE ECONOMIC DEVELOPMENT OF NIGERIA**

(1) Movement of goods and services. (2) Movement of people.

(3) Specific purposes e.g. Air transport could be used for survey.

(4) National and International trade. (5) Opening up of new land and areas.

(6) National integration. (7) Development of tourism.

(8) Employment. (9) Generation of revenue.

**PROBLEMS OF TRANSPORTATION**

**A** **Physical factors**

- Presence of highlands - Distance i.e. long distance

- Presence of marshy areas - Presence of many rivers

- Soil erosion - Poor visibility

**B.** **Human factors**

- Lack of capital - Lack of technical know-how

- Low patronage - Bad roads

**EVALUATION**

1. Describe water transportation in Nigeria.
2. State the disadvantages of this mode of transport.
3. What are the problems facing transportation in Nigeria?

**INDUSTRIES IN NIGERIA**

Manufacturing industry is defined as the industry that is involved in the turning of raw materials into new products by mechanical or chemical process at home or in the factory.

**CHARACTERISTIC OF MANUFACTURING INDUSTRIES**

1. Most Nigeria industries rely on imported skilled labour from foreign countries.

2. Most industries also depend on foreign countries for their raw materials.

3. Industries are concentrated in few locations, especially in urban centres.

4. Most manufacturing industries are mainly light industries.

5. They are labour intensive i.e. require large labour.

6. Their produce is mainly consumed in the local market.

7. They are largely small scale.

**CLASSIFICATION OF MANUFACTURING INDUSTRIES**

Manufacturing industries can be grouped into 3 namely:

**A.** **Light Industries**

- They produce relatively light weight goods such as matches, television sets, electric fans, books, etc.

- They employ mainly the services of women.

- They produce final or consumable goods.

**B.** **Consumer Goods Industries**

- They turn raw materials into consumable goods.

- They are normally located in cities.

**C**. **Heavy Industries**

- They produce heavy or bulky goods.

- They employ the services of mainly males.

- Examples include metallurgical industries, petroleum industries and ship building industries.

Industries can also be classified into primary, secondary and tertiary industries based on

their functions.

**A.** **Primary Industries**

- They are concerned with the extraction of raw materials provided by nature.

- They are also known as extractive industries.

- Examples include mining, fishing, lumbering, farming and livestock production.

**B.** **Secondary Industries**

- They are concerned with the turning of raw materials into finishing goods.

- Examples include construction, building, chemical industries, etc.

**C.** **Tertiary Industries**

- They are concerned with the rendering of services.

- The service could be direct e.g. trading, banking, teaching, medical, etc

- The service could be indirect e.g. police, custom, soldiers, etc

**FACTORS AFFECTING LOCATION OF INDUSTRIES**

1. Proximity of source of raw materials. 2. Nearness to market.

3. Nearness to sources of power. 4. Availability of labour.

5. Availability of capital. 6. Adequate transport network.

7. Government policies. 8. Political stability.

**REASONS WHY MOST MANUFACTURING INDUSTRIES ARE SITED IN URBAN AREAS**

1. Large market 2. Availability of labour

3. Good transport network 4. Nearness to seaports and airports

5. Availability of finance 6. Presence of infrastructure facilities.

**LOCALIZATION OF INDUSTRIES**

This refers to the sitting of industries in a particular area i.e. the concentration of industries in one area.

**Advantages of concentration of Industries**

1. It leads to inter-dependence of industries

2. It creates employment opportunities

3. It aids mobility of labour

4. It leads to the provision of social

5. It encourages healthy competition among industries

6. It leads to the development of organized market e.g. cooperative societies

7. It leads to attraction of subsidiary industries in the area

8. It leads to inventions and innovations due to competition among industries.

**Disadvantages of concentration of Industries**

1. It leads to congestion in traffic, industries and housing

2. It can lead to shortage of amenities

3 It can escalate crime rate like armed robbery, car snatching, etc

4. It can cause environmental pollution due to the presence of many industries.

5. The area is made the target of attack during war time.

6. It encourages rural-urban migration.

**EVALUATION**

1. What is an industry?
2. Explain the different types of manufacturing industries in Nigeria.
3. State the advantages of concentration of industries.

**CONTRIBUTIONS OF INDUSTRIAL SECTOR TO ECONOMIC DEVELOMENT**

1. Provision of employment opportunities 2. Increase in Gross National Product (GNP)

3. Infrastructural development 4. Man power development

5. Funding of education and Research 6. Improvement of trade balance

7. Stimulation of other sectors.

**PROBLEMS OF MANUFACTURING INDUSTRIES**

1. Shortage of raw materials 2. Insufficient capital

3. High degree of foreign dependence 4. Poor quality of industrial labour

5. Political instability 6. Poor management

7. Competition from foreign goods 8. Inadequate power supply

**SOLUTIONS TO INDUSTRIAL PROBLEMS**

1. Acquisition of skills 2. Good government policies

3. Active government participation 4. Incentives to local industries

5. Provision of transport facilities 6. Creation of industrial zones

7. Stable government.

**LOCAL CRAFT (COTTAGE) INDUSTRIES IN NIGERIA**

Local craft or cottage industries are those industries that depend mainly on raw materials obtained from their immediate locality. They use simple tools and their work is of high artistic quality. They include:

1. Leather works e.g. sandals, cushions, handbags, etc. They mostly found in Kano, Bida and Sokoto.

2. Wood carving: This is done in Ikot Ekpene, Uyo, Oyo, Benin city, etc

3. Pottery and glass making: These are done in Ikot Ekpene, Bida, Ilorin and Calabar.

4. Ropes and mat making: These are done in Ikot Ekpene, Warri, and Kano.

5. Brass and silver works: These are done in Bida, Benin and Kano

6. Textile/cloth weaving: These are done in Akwette, Okene, Kano, and Iseyin

**MODERN MANUFACTURING INDUSTRIES IN NIGERIA**

**A**. The Western Industrial Zone: Include Lagos, Ibadan, Sango Ota, Abeokuta, Epe, Apapa, Ewekoro, Oshogbo etc.

**B.** The South-East Industrial Zone: Include Nkalagu, Onitsha, Port Harcourt, Enugu, Aba, Owerri, Calabar, etc.

**C.** The North-Central Industrial Zone: Include Kano, Kaduna, Jos, Zaria, etc.

**D.** The Mid-Western Industrial Zone: Include Warri, Benin, Sapele, Ughelli, etc.

**GENERAL EVALUATION QUESTIONS**

1. What is transportation?
2. State the mode of transportation.
3. Which transport mode is considered the cheapest?
4. State the advantages of land transport.
5. Explain the classification of manufacturing industries in Nigeria.

**READING ASSIGNMENT**

Essential Geography, O.A. Iwena Pages 277-282.

**WEEKEND ASSIGNMENT**

(1) The cheapest means of transportation is (a) Air (b) water (c) Rail (d) Road

(2) The best way to get an urgent Medicare service internationally is by (a) water transport

(b) Road transport (c) Air transport (d) Rail transport

(3) The safest means of moving goods and passengers from one country to another is by \_\_\_\_\_\_\_\_ transport (a) Air (b) Road (c) Rail (d) water

(4) The means of transport that is more prone to accident is (a) water (b) air (c) road (d) rail

(5) One advantage of inland water-ways is that (a) they are flexible (b) they are fast (c) goods are transported cheaply (d) it is affected by seasonality

**THEORY**

1) On an outline map of Nigeria, locate and name, (i) Two international airports (ii) Two

domestic airports

2) State four reasons why most manufacturing industries are sited in cities.

**WEEK SEVEN**

**NIGERIA: POPULATION**

Population is defined as the number of people living in an area at a particular time. Nigeria is the most populous country in Africa with a population of over 150 million people.

**POPULATION CONCEPTS**

**A. Over population:** This is a situation when a country has more people than its physical and human resources can accommodate. Here, the population exceeds the available resources of the country.

**B. Under population:** This is a situation when a country has less people than its physical and human resources can accommodate. Here, the population is less than the available resources of the country.

**C. Optimum population:** This is a population which is neither too small nor great, but when combined with the available resources and given the level of existing technology secures a maximum return per head.

**EVALUATION**

1. Define population.
2. Differentiate between over population and under population.

**Population Density**

This refers to the number of persons per square kilometer of land. The population density of a country can be expressed mathematically as

Total Population

Population density = Land Area

Total population = Population density x Total land area

Total population

Land Area = population density

Example: calculate the population density of Nigeria, having a total population of 88,514,501 with a total land area of 923,768 sq km.

**Solution**:

Total Population = 88,514,501

Total land area = 923,768 km

Total population

Population density = Total land area

= 88,514,501

923,768

= 96 person / km2

**EVALUATION**

Explain population density.

**DISTRIBUTION OF POPULATION IN NIGERIA**

The population of Nigeria is not evenly distributed. There are areas of high, moderate and low population densities.

**A. Areas of high population densities (i.e. above 96 /km2 )**

- The Yoruba Land (Lagos, Ibadan, Akure and Abeokuta)

- The Hausa land (Kano, Kaduna, Jos and Sokoto)

- The Ibo Land (Enugu, Onitsha, Owerri and Aba)

**Reason For High Population Density**

1. Favourable Climate 2. Fertile Soil

3. Natural attachment / Historical factors

4. Administrative headquarters 5. Employment opportunities

6. Presence of minerals 7. Presence of industries

8. Presence of social amenities 9. Commercial activities.

**Advantages of High Population Densities**

1. Large labour force for industries 2. Large market for goods

3. Togetherness 4. Quick dissemination of information

5. Defence.

**Disadvantages of High Population Density**

1. Traffic congestion 2. Pressure on social amenities

3. Inadequate health services 4. Environmental pollution

5. Insufficient food 6. Increase in crime rate

7. Pressure on natural resources 8. Unemployment / Underemployment

10. Development of slums and ghettos.

**B. Areas of Moderate Population Densities in Nigeria**

- Benin city - Bauchi

- Ilorin - Dutse

- Kaduna - Uyo

- Calabar - Owerri

- Bauchi - etc

**C. Areas of Low Population Densities** (i.e below 96 persons /km2)

- The middle belt (Kwara, Kogi, Benue, Niger and Abuja)

- The Niger delta area

- The extreme north east Bornu and Yobe States.

**Reasons For Low Population Densities**

1. Relief especially the presence of rugged relief. 2. Drainage i.e. the presence of rivers

3. Unfavourable climate 4. Poor soils

5. Historical factors e.g. the trans-Sahara slave trade aided the depopulation of the middle belt.

6. Presence of some insects 7. Low economic activities

8. Inaccessibility

**Advantages of Low population**

1. Abundant resources 2. Low crime rate

3. Adequate planning 4. Regular flow of traffic

5. High per capital income 6. High standard of living

7. Low pressure on solid amenities

**Disadvantages of Low Population**

1. Inadequate labour force 2. Under-utilization of infrastructures

3. Deterioration of infrastructures 4. Wastage of output

5. Low output 6. Disincentive to government.

**EVALUATION**

1. Mention areas of high population density in Nigeria.
2. Give reasons for such high population in the areas mentioned above.

**GENERAL EVALUATION QUESTIONS**

1. Define population.
2. Describe the population size of Nigeria.
3. Explain the population distribution in Nigeria.
4. State advantages of low population.
5. What are the disadvantages of high population?

**READING ASSIGNMENT**

Essential Geography, O.A. Iwena Pages 251-254.

**WEEKEND ASSIGNMENT**

1. The type of population that may result to high crime rate is (a) Over population

(b) Optimum population (c) Under population (d) None of the above

2. Which of these States is an area of low population density (a) Lagos (b) Abuja (c) Benin City

(d) Aba

3. The following are effects of low population density except (a) wastage of output

(b) traffic congestion (c) high per capital income (d) low crime rate

4. All the following can cause the population of a place to grow except

(a) Employment opportunities (b) Presence of mineral deposit (c) Poor soils

(d) Favourable climate

5. The most populous country in West Africa is (a) Mali (b) Mauritania (c) Ghana (d) Nigeria

**THEORY**

Draw a sketch map of Nigeria and on it, mark and name:

(i) One area of high population density

(ii) One area of low population density

(iii) One town in each area shown

**WEEK EIGHT**

**NIGERIA: AGRICULTURE**

Agriculture is defined as the cultivation of crops and rearing of animals for man’s use.

**TYPES OF AGRICULTURE**

**A**. **Plantation (Mechanized) Agriculture**

- It requires commercial cultivation in which products are mainly for sale.

- It requires a large area of land.

- It usually involves the cultivation of perennial crops like cocoa, rubber, oil palm etc and is practiced mostly in the south.

- The products are mainly raw materials used by processing industries.

**B.** **Subsistence Agriculture**

- Produce from subsistence agriculture is mainly for family consumption.

- It requires a small area of land.

- It involves the cultivation of many crops at a time i.e. mixed cropping.

- Food crops like maize, cassava, yam, etc are mainly grown.

**C.** **Mixed Farming**

- This system involves the cultivation of crops as well as the rearing of animals on the same piece of land.

- Crops mainly grown are rice, maize, yam, cassava, etc while animals reared may be cattle, sheep, poultry etc.

- It usually requires small area of land which is intensively cultivated.

- It is usually very close to urban centres where produce can easily be disposed of.

- It requires good transport network for easy disposal of products.

- It requires large market.

- Parts of the crops produced can be used to feed the animals while the animal droppings are used as manures.

**D.** **Intensive Agriculture**

- This can be referred to as market gardening or truck farming.

- This is mainly practiced in thickly populated urban areas.

- It requires small area of land which is intensively cultivated throughout the year.

- It involves the cultivation vegetables, fruits and flowers.

- It also involves the use of fertilizers.

**E.** **Crop Rotation**

- This involves the rotation of crops in sequence year after year so as to maintain the fertility of the soil.

- 3 – 5 different crops can be grown on the same piece of land but on different plots.

- Deep rooted crops e.g. yam is followed by a shallow rooted crop like maize during rotation.

- A legume is always incorporated to add nutrients to the soil.

- It also involves the use of fertilizer to improve the fertility of the soil.

- Food crops are mainly produced.

**F.** **Shifting Cultivation**

- It involves the movement of the farmer and his family from one piece of land to another when the land is no more fertile.

- Simple farm tools and family labour are employed

- Forest resources are destroyed.

- The land may rest for several years before it is put to use again.

- Food crops are mainly grown.

- Production is mainly for family consumption.

- It is practiced where land is abundant and where population is very lows.

**G** **Pastoral Farming**

- It is also referred to as nomadic herding.

- It involves the rearing of only animal like cattle, sheep and goat.

- It involves the constant movement of cattle and herdsmen called Fulanis from one place to another in search of pasture and water for the animals.

- Production is favoured by presence of plenty grass.

- Production is favoured by the absence of tse-tse flies, and is done in the North.

**EVALUATION**

1. What is agriculture?
2. Mention the various types of agricultural practices in Nigeria.

**IMPORTANCE OF AGRICULTURE**

1. Provision of food 2. Employment

3. Source of income 4. Foreign exchange earning

5. Provision of clothing and shelter 6. Provision of market for industrial goods

7. Provision of raw materials for industries 8. Development of towns

**PROBLEMS OF AGRICULTURE**

1. Inadequacy of fund/finance 2. Poor transport network

3. Inadequate storage and processing facilities 4. Lack of basic amenities like electricity and pipe borne water 5. Use of crude tools and implements

6. Problem of pest and diseases 7. Unpredictable climate

8. Inadequacy of storage facilities and processing facilities

9. Negative attitude of people towards farming.

**SOLUTION TO THE PROBLEMS**

1. Loans should be given to the farmers

2. Road should be constructed to link rural areas with urban centers

3. Storage and processing facilities should be provided at a reduced rate

4. Farmers should use fertilizers to improve the fertility of the soil

5. Basic amenities should be provided to discourage rural-urban migration

6. Farmers should use irrigation system in periods of drought

7. Modern farm implements like tractors, ploughs, ridges, baresters etc should be used.

8. Farmers should be trained to accept modern system of farming.

**EVALUATION**

1. State the advantages of plantation agriculture.
2. List the importance of agriculture.

**GENERAL EVALUATION QUESTIONS**

1. What is agriculture?
2. Explain bush fallowing as a system of agriculture.
3. What are the problems facing agriculture in Nigeria?
4. Give solutions to the problems of agriculture.
5. Describe the internal structure of the earth.

**READING ASSIGNMENT**

Essential Geography, O.A. Iwena Pages 259-262.

**WEEKEND ASSIGNMENT**

1. Which of these agricultural systems involves the cultivation of cash crops (a) mixed farming (b) plantation agriculture (c) pastoral farming (d) crop rotation

2. One of the greatest problems of pastoral farming is (a) Inadequacy of Labour

(b) absence of large market (c) presence of tse-tse fly (d) illiteracy

3. The agricultural method that involves the movement of the farmer and his family from one piece of land to another is known as (a) crop rotation (b) pastoral farming (c) shifting cultivation (d) mixed farming

4. The following are problems of agriculture except (a) pest and diseases

(b) insufficient capital (c) use of fertilizers (d) use of crude tools

5. Which of these is also known as market gardening (a) pastoral farming

(b) Intensive agriculture (c) shifting cultivation (d) subsistence agriculture

**THEORY**

Draw an outline map of Nigeria and on it, show and name

1. One area of pastoral farming (ii) One area of plantation agriculture

**WEEK NINE**

**MINERAL RESOURCES IN NIGERIA**

**PETROLUEM OR CRUDE OIL:** Petroleum is a sedimentary rock mineral found in Port Harcourt (Rivers State), Warri and Ugheli (both in Delta State), Akwa-Ibom and Imo State. The first oil well in Nigeria was sunk in Oloibri near Port Harcourt. Other oil wells are found in Afam, Ugheli, Warri, Egbema, etc. Petroleum is refined by a method called fractional distillation in refineries located in Port Harcourt, Warri and Kaduna.

**Method of Mining Petroleum**

The method used in mining petroleum is the drilling method. Here, the rocks are sampled and tested for traces of oil. When any trace is found, a well is sunk to reach it with the aid of a drilling rig. The oil is then pumped out mechanically or naturally if the pressure within the oil zone in the soil is high.

**COAL:** Coal is also sedimentary rock mineral found in Enugu and Okaba (Benue State). The type of coal found Nigeria is the sub-bituminous grade. Coal is mainly used as a major source of fuel both in homes and railway locomotives in the past.

**Method of Mining Coal**

Coal is mined by underground mining or adit method. Here, a tunnel or adit is cut into the coal seam. Explosives are then used to shatter the coal. A light rail car is then used to haul the coal from the tunnel to the surface or into waiting Lorries.

**EVALUATION**

1. Which type of rock is petroleum?
2. Mention states in Nigeria where this mineral is found.
3. Explain the method of mining coal.

**IRON ORE:** This is a basement complex rock mineral found in Itakpe (Kogi State) and Aladja (Delta State). Iron ore is the major raw material used in iron and steel complex. Iron and steel complexes are found in Ajaokuta (Kogi State) and Aladja (Delta State). Iron and steel rolling mills are located in Oshogbo (Osun State), Jos (Plateau State) and Katsina (Katsina State).

**Method of Mining Iron Ore**

Iron ore is mined by a method called open cast method.

- Explosives are used to blast and remove overburden rocks.

- A powerful machine called drainage is then used to pile the ore into a heap.

- A monitor is then used to direct a powerful jet of water towards the heap.

- The water washes the soil out through a series of sluice boxes.

- The iron sinks to the bottom of the sluice boxes while the water carries the dirt away.

- The iron concentrate now formed is later sent to the factory for smelting.

**TIN AND COLUMBITE:** These are basement complex rock minerals found near Jos (Plateau State). Tin is used for coating containers in the caning industry while columbite is used in the manufacturing of heat resistant steel used in Jet engines. Tin and columbite occur together naturally just like petroleum and natural gas.

**Method of Mining Tin and Columbite**

Tin and columbite are mined by a method called open cast method (used also for mining Iron ore). The process of mining is as follows:

- Explosives are used to remove the overburden rocks.

- A powerful machine called drainage is then used to pile the tin into a heap.

- A monitor is then used to direct a strong jet of water towards the heap.

- The water washes the soil out through a series of sluice boxes.

- The tin ore sinks to the bottom of the sluice box while the water carries the dirt away.

- The tin concentrate now formed is later sent to the factory for smelting.

**LIMESTONE:** This is a sedimentary rock mineral found in Ewekoro and Shagamu (Ogun State), Ukpilla (Edo State), Calabar (Cross River), Nkalagu (Anambra State), Benue and in Sokoto State. Limestone is an essential raw material for the manufacturing of cement. All cement industries are located in all the above areas where limestone is found.

**Method of Mining Limestone**

Limestone is mined by a method called quarrying

\_ In this method, the over burden rocks are scraped off with mechanical excavations in other to reach the limestone.

\_ The limestone is then shattered with explosives and scooped out by the excavator into trucks waiting to carry it to the factor

**EVALUATION**

1. Which method is used in mining iron ore?
2. Explain the method of mining tin.
3. Explain the method of mining limestone.

**IMPORTANCE OF MINERALS**

1. Provision of employment.

2. Revenue generation.

3. Foreign exchange earnings.

4. Provision of raw materials for industries.

5. Provision of essential goods like kerosene, petrol, grease, engine oil, etc.

6. Important of standard of good living.

7. Growth of towns.

8. Acquisition of skills.

9. Production of geological maps.

**PROBLEMS FACING MINING**

1. Poor management.

2. Environmental pollution e.g. oil spillage.

3. Poor transport network.

4. Inadequate capital for exploitation.

5. Outdated topographic maps.

6. Difficult terrains.

7. High rate of sabotage by unpatriotic people.

8. Fluctuation in world prices of minerals .

9. Problems of constant conflicts with the local people and the prospecting companies.

**GENERAL EVALUATION QUESTIONS**

1. List some of the minerals that can be found in Nigeria.
2. Which states are these minerals mentioned found.
3. Explain the method of mining tin and columbite.
4. State the importance of minerals to the economy of Nigeria.
5. What are some of the problems encountered in the process of mining.

**READING ASSIGNMENT**

Essential Geography, O.A. Iwena Pages 255-257.

**WEEKEND ASSIGNMENT**

1. Which of these minerals is mined by drilling method (a) coal (b) Iron ore (c) petroleum

(d) columbite

2. Which of these minerals is found at Okaba in Benue State (a) limestone (b) columbite

(c) coal (d) lead

3. Which of these minerals occur naturally with natural gas (a) columbite (b) lead (c) crude oil (d) Zinc

4. Which of these is used as a source of power in locomotives (railway)

(a) petroleum (b) natural gas (c) coal (d) iron ore

5. Oil refineries are sited in the following areas except (a) Kaduna (b) Warri (c) Lagos

(d) Port Harcourt.

**THEORY**

Draw an outline map of Nigeria and on it locate and name one area where the following minerals are found (a) coal (b) tin (c) limestone (d) petroleum

**WEEK TEN**

**POWER RESOURCES IN NIGERIA**

There are four major sources of power in Nigeria. These sources of power are:

- water

- Coal

- Petroleum

- Natural Gas

HYDRO-ELECTRIC POWER (H.E.P.): This is the power generated by water. Examples of H.E.P. projects in Nigeria are found in Kainji Dam on River Niger and Shiroro Dam on River Kaduna.

THERMAL POWER: This is the power generated through the use of coal, natural gas and petroleum. These minerals are used to power turbine or giant generators in other to generate electricity.

The following are places where thermal plants are in Nigeria:

THERMAL PLANT STATE FOUND TYPE OF FUEL USED

Egbin Lagos Petroleum

Ijora Lagos petroleum

Sapele Delta Gas

Oji Anambra Coal

EVALUATION

1. Mention the places where thermal plants are found.
2. State the sources of power in Nigeria.

EFFECTS OF CLIMATE ON DAM

1. Inadequate rainfall reduces the volume of water in the rivers or dams.
2. Excessive rainfall also leads to over flow of water from the dams.
3. High intensity of rainfall leads to sedimentation of silts in dams.
4. Intensive heat also leads to high evaporation of water from dams.

**GENERAL EVALUATION**

1. What are the sources of power in Nigeria?
2. Water is used to generate which type of power?
3. The power generated from petroleum is called\_\_\_\_\_\_\_
4. Mention the places where thermal plants exist in Nigeria.
5. Lake kainji is on which river?

**READING ASSIGNMENT**

Essential Geography, O.A. Iwena Pages 257-258.

**WEEKEND ASSIGNMENT**

1. All the following are problems of mining except (a) use of obsolete technology (b) inadequate

foreign capital (c) shortage of power (d) inadequate unskilled labour

1. The largest man made lake in Nigeria is Lake (a) Kainji (b) Shiroro (c) Malawi (d) Volta
2. Which of the following is a major hindrance to H.E.P.? (a) inadequate capital

(b) unavailability of good sites (c) absence of domestic market (d) sufficient volume of water

1. The mode of transport that is best suited for the distribution of petroleum products is (a) road

(b) rail (c) water (d) pipeline

1. Which of the following natural resources is non-renewable? (a) soil (b) vegetation (c) wild

life (d) minerals

**THEORY**

1. State five problems affecting dams.
2. sGive five economic importance of dams.