

Geography

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**World Regional
NCERT BASED**



PRELIMS EXCLUSIVE

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WORLD REGIONAL GEOGRAPHY

ASIA

The largest continent of the world stretching between 10°S to 77°59' N latitude is roughly occupying entire hemisphere. Apart from it the continent of Asia is marked with the presence of 2/3rd of world's population. It is therefore designated to be continent of contract. On physical front, it houses the highest peak Mt. Everest along with the lowest part of the earth surface, i.e. along the shores of Dead Sea which is 392 m below the sea level. Further it has the cold pole in Verkoyansk (Young Fold mountains) and Jacobabad in Pakistan with 52.2°C of temperature. It has Mysaurum with the wettest place of earth along with dry hot desert, from equatorial evergreen forest to cold desert vegetation and thereby extensive variety of soil from alluvial black to lateritic and podsol. On the cultural grounds, it includes most densely populated regions along with sparsely populated ones along with housing all the prominent races of the world.

PHYSICAL ASPECTS:

Asia has been sub-classified into 5 distinctive physical zones marked with distinctive characteristics:

1. Northern Low land: Stretching between arctic oceans in the North Yoblonov range in north east Ural mountains to the west, this plain is considered to be the extension of European steppes incorporating Siberian and Turanian plain. This plain is drained by Ob Yeney, Lena with their mouths in arctic ocean and thus always associated with marshy lands. The extreme south western extent with Amu Darya and Syr Daryo semi arid plain, Turani or Turanian is created.

2. Central Mountain Range: The extensive young fold series are marked with different inter mountain plateau as well as basins in between Tian Shan and Kunlun Shan, Tarim basin is located. Majority of its extension is covered by Takla Makan Desert which ultimately terminates near Lopnor Lake.

This basin is marked with extensive oasis at the western edge namely knotar, Yarkand and Kashgar. Along with these mountains to the north eastern extent, Gobi desert, Shamo desert is located. Its extension within the curve of Huwang Ho have been identified as Orctor desert.

3. Old Plateau: These features are associated with the Gondwana land shows their development of early carboniferous epoch. It includes:

- a) **Plateau of Arabia:** With steep rising western side with gently sloping eastern margin extending to the extensive deserts of Saudi Arabia. The largest plateau of Asia truly presents the semi arid to extreme arid conditions except for Mesopotamia where Tigris and Euphrates has developed fertile arable land (cultivable land).
- b) **Peninsular India:** The oldest plateau marked with the presence of pre Cambrian (Archian) rock strata. Subsequently modified this plateau represents steeper elevation to the west with gentle undulation towards east. This plateau is marked with large number of rivers draining into Bay of Bengal and thereby creating extensive alluvial coastal plains.
- c) **Shan-Yunan Plateau:** Associated with Indo China peninsula, Shan Yunan plateau marks the fklow of Irawady, Salween, Mekong rivers. Thus quite dissected plateau associated with the tertiary relief feature.

4. River Valley (Great River Valley): The Tigris Euphrates (Mesopotamian plain), The Indus Ganges, Indo Gangetic plain, Howang Ho and Chang Zisung or Yangse, Northern China plain, Siksang, Southern China plains, Amur and Banghira, Manchurian plains are the examples of massive river valleys associated with excessive density of population as has been the destination for primitive permanent human settlement.

DRAINAGE BASIN: In accordance to the mouth of the rivers, Asian rivers have been categorised into 3 parts:

- (i) **Indian Ocean associated basins:** It includes Tigris Euphrates (Persian Gulf). Indus,

Narmada, Tapi, Sabarmati, Mahi, Ariabian Sea, Ganges. Brahmaputra, Irawadi. Salween. Bay of Bengal (Gulf of Marthban)

(ii) **Pacific Ocean:** Amur (Sea of Okhosik), Hwang Ho (Yellow Sea), Chang Zhang (East China Sea), Si Kiang (South China Sea), Mekong (South China Sea), Malu river Korea (Sea of Japan).

(iii) **Arctic Ocean:** Ob, Yenese, Lena.

5. Group of Islands: Archipelago extending in Indian and Pacific Ocean, massive number of islands forms the part of Asia. Among the major island countries, Indonesia, Philippines, Japan, Maldives and single island Sri Lanka and Taiwan. Mauritius – a group of island.

CLIMATE OF ASIA

Asia experiences varied types of climate as :

1. Equatorial climate – vegetation evergreen forest
2. Monsoon – deciduous forest
3. Savannah – coarse long grasses with scattered areas
4. Tropical deserts – thorny bushes
5. Limited Mediterranean – olives and citrus fruits
6. Steppes – short soft grasses
7. Eastern warm temperate – deciduous and coniferous forest
8. East margin cool
9. Mid latitude desert – inter mountain – dry desert – dry barren lands
10. Tigris coniferous – coniferous forest
11. Tundra – mosses and lichens
12. Mountainous

POPULATION: Housing 2/3rd of the population with China and India as the most populous countries of world, Japan, Indonesia and Bangladesh – mostly densely populated countries. In terms of composition, Caucosoids, Negroids and Mangolids population are concentrated here with varied religion, cult, language available here. Geographically Asia is divided into four prominent parts:

1. South Eastern Asia

2. South Western Asia
3. Southern Asia
4. Far East

SOUTH EAST ASIA

1. Extending between pacific and Indian ocean, the south East Asian countries have longitudinal stretch of 90° east to 140° east and 10° south to 28° north latitude.
2. Subdivided into 2 major parts of mainland and Archipelago. In total extending for 4830 km i.e. from Myanmar to New Guinea.

PHYSICAL ASPECT:

1. Mainland: The relief feature of mainland is divided into several categories:

- a) The young fold mountains of Asakan Yoma with Northern extent of Chin Hills (Myanmar).
- b) The peninsular extension with Dawna, Bilacu Taung ranges extending upto Malayo peninsula with “Kuala Legis” the driest point of south east asia.
- c) Shan plateau located between east Myanmar and West Thailand. It is extending towards east in Laos as Yunan plateau.
- d) Annamite Range (Vietnam) separated from Yunan plateau by the valley of red Song Koi river.
- e) Korat plateau: Located in Thailand, it is extending upto Dangrik range to the south (most extensive feature of Thailand).
- f) Cardamom Range (Elephant range) : The extension of Dangrek range in South West Combodia which extends upto Moi plateau to the extreme south.
- g) Plain: Irawaddy along with Chindwin Rice bowl of Myanmar, Red Song Koi rivers, Plain Vietnam Chaophraya Thailand, Mekong plains, Cambodia.

2. Archipelago: Several mountain ranges young fold like Barisan (Sumatra) Waker Muller, Wose, Tamabo, Meratus (Kalimantan) Sudhir min (housing highest peak Shukarno 5029 m), Jaya vijaya, Meoke and Vanroses (Seriqn Jorya).

3. Pacific ring of fire or volcanoes: Extending from Sumatra Java Bati celesbes or sulawesi, Moluccas, Philippines.

4. Major Trenches: Philippines trench with Johnson deep 10,497 m below the sea level is the deepest and most elongated (965km) trench followed by Java trench and Banda trench extending south of Barda islands.

5. Drainage system : Includes,

- i) Irawaddy : Yangon and Mandelaya, Myanmar.
 - ii) Salween
 - iii) Mekong – moving parallel to Salween in upper coarse has Wienliane and Phnom Penh located at its bank.
 - iv) Chao Praya – River of Thailand, Bangkok located at its bank.
 - v) Red Tonking – Hanoi, located on its bank.
- The Archipelago of South East Asia are located on Tundra and Bahui shelves. In terms of area, the descending order of the countries is Indonesia, Myanmar, Thailand, Malaysia, Vietnam, Philippines, Laos, Cambodia, Brunei, Singapore

CLIMATE OF SOUTH EAST ASIA

1. Equatorial climate: Associated with the extensive coastal periphery of the region. Associated therefore with intense foliage of leaves.

2. Summer Monsoon climate: The south western parts of the archipelago experiences heavy downpour during the summer monsoon aided by existing relief features.

3. Peninsular continental climate: Experiencing both summer and winter monsoon.

4. Mountainous climate: The variabilities alongwith the relief features

VEGETATION

a) Equatorial rain forest:

- i) Comparatively less dense
- ii) Almost cleaned for plantation purposes
- iii) For slash and burn agriculture
- iv) Most important tree chinchona (Quinine) in Indonesia – the largest areal coverage under this tree along with production.

b) Monsoon Deciduous forest: Marked with Eucalyptus and Bamboo, monsoonal deciduous forest is providing teak as the most valuable wood.

c) Savannah grasslands:

- i) **Imperta grass:** Known for insects and parasites, its extension is seen in Philippines, Thailand and Indo China.
- ii) **Cagon:** is the total name of Savannah grassland in Philippines.
- d) **Mangsoon:** Near the mouths of the rivers as well as the extensive shelves penetrating inland Mangrove forests have grown predominantly along coastal Brunei and Indonesian Borneo associated with Sunda shelf.

e) Mountainous: In Malaya peninsula and the equatorial Archipelago, the foothills are marked with equatorial rain forest whereas to the north monsoonal deciduous forest are associated with the windward sides of the mountains.

SOIL OF SOUTH EAST ASIA

- 1. Alluvial soil:** River valleys
- 2. Black soil:** The volcanic soil associated with the islands of Sumatra, Java, Borneo Ruzon, Mindnao and Celebs.
- 3. Laterite soil:** Associated with equatorial rain forest regions with excessive leaching.
- 4. Red yellow:** To the interiors of the islands at the transition belt of equatorial and deciduous forest, semi fertile red yellow soil is seen. Eg. the middle coarse of Mekong river. The river valleys of Borneo's coastal rivers.
- 5. Mountain:** Thin layer comparatively fertile in the lower reaches predominantly used for agricultural purposes.

POPULATION OF SOUTH EAST ASIA:

1. The descending order of population size – Indonesia, Vietnam, Philippines, Thailand, Myanmar, Cambodia, Laos, Brunei, Singapore.
2. More than 75% of population is rural.
3. Massive concentration is associated with the river valleys and black soil region (Java).
4. The population composition is quite varied:

- a) **Malay:** Forming the most prominent ethnic group followed by minority Chinese group.
- b) **Khmer:** Of Cambodia is the most ancient inhabitants.
- c) **Monkmer:** Population is concentrated in Myanmar and Thailand.
- d) **Karen and Chin :** Myanmar.

ECONOMIC ACTIVITIES OF SOUTH EAST ASIA:

A. Agriculture:

- i) The scattered settlement all along South East Asia is marked with subsistence agriculture except in Singapore and Brunei.
- ii) Wet rice is the most prominent crop cultivated in this region (almost occupying 80% of agricultural land). In Cambodia, Laos and Vietnam. Cultivation is truly on subsistence basis whereas in Thailand and Philippines, air fed commercial cultivation and in Indonesia, mechanised rice cultivation is done. The descending orders of producers of rice are Indonesia, Vietnam, Myanmar and Philippines.

Rubber:

- i) Introduced during colonial period, rubber accounts for major output of South Eastern Asia.
- ii) Descending order of producers are Malaysia, Indonesia, Thailand and Philippines.

Palm Oil: Predominantly associated with Malay Peninsula followed by Peninsular Thailand.

Coconut: Philippines produces 2/3rd of world's coconut followed by Indonesia and Vietnam.

Other products:

Cocoa in Malaysia; Coffee in Indonesia; Maize in Indonesia

B. Fishing:

- a) Known for shrimp.
- b) Artificial fishing grounds is paddy fields, natural ponds are the prominent sites.
- c) The descending order of producer – Thailand, Indonesia, Malaysia, Philippines.

- d) Gulf of Mastabas is world known for cart fishing

C. Mineral

Tin: The leading mineral available in almost all the countries. Malaysia associated with Kinta Valley Larut plains: Kelang plains. The prominent smelting center is located in Penang islands. Thailand – The tin producing areas are associated with Kro peninsula and Phuket island.

Indonesia – Sumatra, Pakambaru and Medan.

Bornea – Balikpapan.

Myanmar – Yangon

D. Mineral Oil: Indonesia: The leading exporter of mineral oil with Medan, Pkambaru as the major oil fields followed by Balikpapan. Brunei following it is Myanmar.

E. Others: Myanmar – lead and silver alongwith tungsten and siverstone.

Indonesia – coal, bauxite and copper

Philippines – Chromite, asbestos

Vietnam – coal.

F. Industries:

- (a) Industrially backward except Singapore which being enter port has developed massive industrial base and therefore considered as Asian Tiger. Strait of Jordove separating Singapore and Mainland.
- (b) Predominantly food processing and textile industries have developed.
- (c) Thailand having automobile assembling industries.
- (d) Malaysia and Philippines with electronic and fertilizer industries.
- (e) Tourism – Singapore, Malaysia are the important tourist destinations. Myanmar, Laos, Cambodia not members of ASEAN.
- (f) **Transport network:** (i) Being basular and islands, development of waterways has been the most prominent transport link.
(ii) The railways moving from Ho Chingh Minh, Hanoi to China and Bangkok to Singapore via Malaya peninsula are the important examples.
(iii) Roadways are limited on international grounds.

IMPORTANT FACTS ABOUT SOUTH EAST ASIA:

1. Sago - the starch foods common in South East Asia.
2. Abaca - local name for Manila Hemp. Made out of vegetable fibres to make ropes.
3. Cigar - tobacco is cultivated in Cagaiyan valley, northern Luzon island, Philippines.
4. Lave Tabo – The largest crater lake of Indonesia Sumatra.
5. Chauk – an important upcoming oil field of Myanmar.

SOUTH WEST ASIA

LOCATION: Stretching from Istanbul in Europe to Afghanistan in East, the South West Asian countries extend between 23° East to 72° East and 13° N to 44° N. It includes Turkey, Cyprus, Jordan, Lebanon, Israel, Syria, Iraq, Iran, Saudi Arabia, Yemen, Oman, UAE, Qatar, Kuwait, Bahrain and Afghanistan.

PHYSICAL ASPECT:

1. This region is divided into three structural form and is known for dual land configuration.
2. It houses the Alpine system as well as the old plateau of Arabia which provides a projected profile of the region.

A. ALPINE: This is further sub-divided into five sub parts:

- i) Hindukush
- ii) Elbruz and Zagros with plateau of Iran.
- iii) Taurus and Pontaic with plateau of Anatolia.
- iv) Armenia knot
- v) Larentine plains of Jordan valley.

Hindukush Mountains: a) The highest western extent from Pamir knot.

- b) With average height of 5000 m.
- c) Its western boundary is marked by helmand river.
- d) Known for historically important Khyber Pass and Gomal Pass.
- e) Several mountainous ranges extending in the Central Afghanistan forms the contiguous parts including Khwaja Mohd. Koh-I-Baba.

Elbruz and Zagros: a) The continuation of Hindukush as Kopet range south of Turkmenistan and thereafter Elbruz mountain south of Caspian Sea.

- b) The highest peak of Elbruz mountain is Mt. Devband.
- c) Absolutely south of Elbruz, Zagros mountains extend towards north west along the Markesan coast parallel to shatal arabi (river).
- d) The highest peak of this range is Mt. Zard (4543 m).

Plateau of Iran: (a) Known for its unique structure with marked semi arid condition, this inter mountain plateau is approximately 1500 m in height.

- b) Eastern part of plateau is marked with Boizon and Palayas. To the north is Dast-e-kavir, to the south is desert Dart-e-cath. Its further extension to south-southwest is identified as Murgon desert.

Armenia knot: (a) It is a minor plateau region acting and nuclei for the young fold mountain ranges.

- b) This nucleus extends in Iran, Iraq, Turkey and Armenia.
- c) It is the point from where rivers like Murat, Tigris and Oxus originates.

Pontaic and Taurus: (a) West of Armenia knot – the extensions south of Black Sea and north of Mediterranean are Pontaic and Taurus respectively.

- b) To the western extent, it is marked with volcanic rock strata and penetration of Agean sea along the highly zaggered coastal line.
- c) Taurus is comparatively higher mountain range than Pontaic with highest peak located near Antalya with 3086 m high.
- d) The extension of these mountains in the Mediterranean is perceived to have created Cyprus along with the mountain ranges, Karpas, Karema and Toondroos of this island.

Levantine Plains: (a) The coastal areas of Lebanon and Israel are designated to be Levantine plains.

- b) The parallel coastal mountain ranges associated with this plain are called Icbel Druze (Fold mountains).
- c) These ranges enclose a narrow valley of Israel Beka valley.
- d) Jordan river forming the boundary between Jordan and Israel flows parallel to this valley.

B. TIGRIS EUPHRATES PLAINS:

- i) Identified as Mesopotamia (it is a Doab), it extends predominantly in Iraq.
- ii) Both the rivers originate in Turkey with Euphrates draining via Syria in the upper course.
- iii) The middle basin in the Thar-Thar basin extending from Samarra to Alkut-Aruly alluvial.
- iv) Beyond Alkit extending towards South east, the confluence of river – Satal Arab provides the most fertile track on which Basra of Iraq and Abadan of Iran are located.

C. PLATEAU OF ARABIA:

- i) Located between Persian Gulf, Arabian Sea and Red Sea, this put forth the example of oldest rock strata of the region.
- ii) Has high mountains towers west as Kijaz Mt. (Saudi Arabia), Asir Mt. (Yemen) extending to Saudi Arabia. This region is marked with Erg and Reg deserts.
- iii) North east of it is Rub-al-Khali – totally uninhabited place. It is known for mineral oil reserves.
- iv) North of Rub-al-Khali is NJO plateau also called as Jabal Sambhar. This region is the stony desert which extends upto Addam to the east.
- v) Further north Annapurna desert with north western extension as Syrian desert is located.
- vi) Along the Arabian Sea, the extension of western high mountains is in the form of Hadramawt in Yemen and Oman extending upto Gulf of Oman where Akhdar range is located.

- vii) North West of it in UAE Al Jiva is at low lying region with the average height of 750 m above sea level.

DRAINAGE:

- a) Arabian peninsula is totally deprived of any permanent drainage.
- b) Tigris Euphrates forms the largest drainage network of the region.
- c) Jordan river just 240 km long river rising from Gellibe sea and draining itself in Dead Sea. It is identified as a holy river.

OTHERS: It includes short mountainous streams having very minor course as Sakarya, Kizil, Murat (Turkey) and several rivers rising from Hejaz and Asia mts. and termination in the extensive desert of Arabian peninsula.

CLIMATE:

A) Tropical hot desert: Associated with Saudi Arabia, Syria, Western Iraq with marked daily variabilities.

B) Mediterranean: Along coastal areas of Mediterranean sea including Jordan, Israel, Lebanon, Turkey, Syria and Cyprus Mediterranean climate. Winter rainfall predominantly due to temperate cyclone.

C) Iranian type/Interior plateau: Experienced in Iran, Eastern Iraq and Western Afghanistan, semi arid type climate with extreme condition (comparatively less than hot desert).

VEGETATION: Arid and semi arid region alongwith extensive mountain has resulted in distinctive vegetation profile.

a) Mediterranean: Associated with Mediterranean countries in pure form along with mixed mountain in Taurus, Pontic, Armenia and Zebel Druz.

b) Dry grassland: Predominantly in Anatolic plateau, Iran. The moist southern part along Zingros range has cedar, ash, poplar, Iraq date palms. Saudi Arabia, interior Yemen, Oman, Western Iraq are almost deprived of forest – Xerophytes.

SOIL

- a) Sandy soil in Israel, Jordan, Syria, Arabia, Western Iraq, Central – South Central Iran.
- b) Sandy alluvial : Jordan river, Tigris Euphrates.
- c) Chernozem Ibamy: Turkey and northern Lebanon.

POPULATION

- 1. Large track is marked with uninhabited places; distribution of population is highly unequal.
- 2. Descending order of countries Turkey, Iran, Iraq, Saudi Arabia, Syria, Yemen.
- 3. In accordance to size, the descending order of countries is Saudi Arabia, Iran, Turkey, Yemen, Iraq.
- 4. 3/5th of the population is concentrated in less than 25% of land area.
- 5. 2/3rd of population is associated with agriculture as primary activity.
- 6. The population is marked by variable religious groups like Islam, Christianity and Jewish.
- 7. The most important official language is Arabic followed by variable languages in use particular to the countries like Farsi in Iran, Hebrew in Israel, Turkic in Turkey and Cyprus.
- 8. Some other imported languages includes Hindi, Urdu and Baluchi.

ECONOMIC ACTIVITY: Agriculture:

- a) 2/3rd of the population is engaged in agriculture.
- b) Cultivation of crops along with animal rearing still remains the prominent activity of this region.
- c) In terms of population engaged in agriculture, the descending order of the countries are Yemen 90%, Turkey 61% and Oman 60%.
- d) In the least engagement in agriculture are Bahrain, UAE and Arabia with less than 5% engaged in agriculture.
- e) The prominent agricultural products include wheat, barley, cotton, millet as well as fruits and vegetables associated with Mediterranean region.

- f) Turkey the leading producer of tobacco in this region.
- g) Lebanon and Israel are the leading producers of olive.
- h) Iran and Iraq are associated predominantly with wheat cultivation.
- i) Dates are the most important output of this region accounting for 90% of total world's production predominantly in the oasis region.
- j) The most suitable site for agriculture is Shat-al-Arab region predominantly engaged for wheat cultivation.

NOMADIC HERDING: It is the most extensive economic activity with variable characteristics of herds in regional perspective. Turkey is known for Angoora goats rearing and producing Mohair work (leading producer). The other countries like Saudi Arabia with camel, Syria as ass and horses are the true destination of subsistence nomadic herding.

MINERALS:

Coal bituminous: Turkey, Iran, Israel. In Turkey, the prominent region is Trabzon Kars.

Copper again in Turkey (Eizurum), Iran Kerman and Israel.

Others- Iron ore, potash salt, gypsum, zinc and lead are the other prominent minerals associated predominantly with Turkey, Iran and the Jordan valley.

MINERAL OIL: Most extensive resource with Saudi Arabia, Iran, Iraq, Kuwait and Qatar having 60% of total reserves of the world.

These mineral oil deposits are associated with Mesozoic, calcareous and sandy rocks found most extensively in this belt.

Important regions of mineral oil:

Saudi Arabia: Accounting for 20% of the world's production with major oil fields located in Dhahran, Al Qatif and the major refinery associated with Ras Tannurah and Al Dammu. This country has developed extensive pipelines from the prominent mineral source (Persian Gulf) to Saida (Lebanon) Mediterranean coast.

Iran: Accounting for 10% of output with the major producing centre at Masjit Soleyman,

Khorramabad and Khorramshahr. The major refinery Abadan (Shat-al-Arab). The pipeline have been developed from Persian coast to Haifa Mount in Israel.

Iraq: 5% of the total production with important oil centres with Kirkuk, ramadi and Irbir. The pipe line have been developed connectivity. These oil centres with Haifa in Israel and Tripoli in Lebanon. Kuwait: (Meena-al-Ahmad); UAE (Abu Dhabi), Qatar (Doha) and surrounding areas.

INDUSTRIES:

Israel is known for diamond cutting and polishing centred at Netanya followed by refineries and heavy industries at Haifo with light manufacturing centred at Tel Aviv. Turkey makes sugar from dates. Also known for diverse industrial development with woollen textiles in Bursa, cotton textile in Istanbul, Adapazari light manufacturing as well as iron and steel work associated with Antalya and Trabzon.

Iran known for carpets centred at Estahan along with it iron and steel centred in Tehran and Qom. Syria known for cotton textiles and handicrafts with centred at Aleppe.

Lebanon with Beirut the commercial centre and port, Sadiq important oil refinery. Tripoli important oil refinery centre.

Iraq – Baghdad.

Jordan – Maan

Israel – Tel Aviv, Yafo.

TRANSPORT AND COMMUNICATION:

- * Developed in roadways, railways and airways, this particular region is marked with the absence of international network.
- * The prominent network includes the track between Berlin to Baghdad. Similarly in Saudi Arabia, the connectivity between Riyadh and Persian Gulf to Medina are the important examples.
- * Turkey is marked with most extensive network of road and railway.
- * In rest of the countries, pipeline development has been important in comparison to other

network predominantly to the required oil measurement and difficult terrain (relief).

IMPORTANT FACTS:

- Jordan is leading exporter of phosphate in the world.
- Riyadh is the centre of Wahabi sector
- Kebo dam is constructed on Euphrates river in Syria.
- Miro funhu dam is constructed on Kizil river (Turkey).
- Fertile cresence of the world Tigris and Euphrates.
- The tripolar religious centre Perusalam
- Haifa the port on Bay of Acri.
- Al-Qurnah is the nearest point regarding the confluence of Tigris and Euphrates.
- Kavids fish (small) caught in Caspian Sea (Iran).
- The most important lake of Iran is Urmia.
- Land of saline lakes – Turkey Lake van, Lake Zioz, Lake Beysehir.

CHINA

1. The third largest country of the world located to the south central part of Asia incorporates varied relief features and associated climate variabilities and economic activity.
2. The relief feature of this country is divided into three prominent categories:
 - a) The rugged mountainous region alongwith the plateau and inter motane dry plains.
 - b) Old plateau (Yunnan)
 - c) The plains including entire coastal stretch of the country.
3. Surrounded by Russia, Kazakistan, Kirgistan, Tajakistan, India, Nepal, Bhutan, Vietnam, Mongolia, Laos and Korea, this country has important strategic locations.
4. Associated with the prominent international north pacific trade route, the significance of this country has increased recently.
5. The latitudinal extent of country is from 15° N to 53° N and longitudinal stretch is 74° E to 134 E.

PHYSICAL FEATURES:

1. Mountainous belt: The eastward extension from pamirs marks the most important feature of China (accounting for 47% of the total land area). It is sub divided into different facts:

a) Kunlun shan: extending in east, this mountain range is known as Tannugula Bayanharshan, Oaxwe shan, Daling shan, Shahui shan, Nu shan and Wuliang shan.

b) Tibet plateau: Located to the south of Kunlun shan, plateau of Tibet is the highest plateau region of the world with 3000 to 4500 m high towards west. It is the highest and in entire stretch it incorporates several lakes. Pangong Tso, Ziring, Tingra Yum, Namro, Yamarok, Iso Pomotso.

c) It is the source of major rivers of this region. Among the east flowing Hwang Ho, Talong Jiang Yangse (Chand iHang) Khinsa Khing in Tibet, Lancing Jiang (Mekong), Nujland (Slween), Trangpo (Yarlang, Brahmaputra).

d) Northern mountains: Altun shan, Qilian shan, Nan shan associated with Quaidam Basin (a flat top plateau) with Kunlun shan to the south, two important plateaus of Tsaidam and Kokonar plateau are important predominantly for nuclear testing as well as associated jobs. It includes the lakes like Ayakum Hu.

e) Northwest ranges: It includes Tianshan, Tarim basin (to south) and tufran depression (to east). Dzungarian basin to the north. The dzungarian basin has Altai mountains towards north which is the southern extension encloses the basins in the form of Bei shan.

f) North east extension: The Altai mountains extends in Mongolia with its extreme eastern ends as great Kingan mountains incorporating Gobi desert to its west, shamo desert to its south and inner Mongolia plateau.

g) Sichuan basin: located to the south of Qinling mountains, Tsiling mountains, it extends upto Chang Jihand and Dabo Shan to north east.

2. Old Plateau: Yunnan plateau – the extension of old plateau of Indo China peninsula which is traversed by Hongshi and Mekong Salween rivers

of Indo China. This plateay extends further south of the border between Vietnam and China (upto Tongking river).

3.Plains or river valleys:

a)The great plain of China: It includes Hwang Ho and Yangtse – created coastal plains which roughly extends from Qinhuang Dao in the north to Hangzhous. The Hwang Ho basin is marked with extensive loess deposits and due to its changing course, the plains of Yangtse and Hwang Ho has almost confluenced.

b) The plains of Yangse is also called as red basin. The grand China canal is connecting both the rivers along this plain to provide the extensive artificially constructed water way.

c) Manchurian plain: The plains associated with Amru and Sangawa (Sanghusi) river fertile cold tract facilitating concentration of population.

d) Si-Kiang plains: A small narrow plain centred at Guang Zhou, Canton.

DRAINAGE:

1. China is known for densest hygro graphic network.
2. Rivers are categorised into different categories as the desert rivers – Zarin.
3. The north flowing Istysh river via Dzungarian basin.
4. North western flowing rivers Indus and sutlej.
5. South flowing rivers Salures and Mekong, east flowing rivers Hwang Ho, Chang Khang, and Sikiang.

DESERTS OF CHINA

The extensive inter mountain basins have provided the site of desert regions. The region in between Altan Naushan, Tein shan and Alta North-northwest and Great Kinga mountains north east has the series of deserts. The sequence west to east Kurban, Tangubaden, Jirya, Ulanbah, Kumpuchi, Lesser Syngeri.

CLIMATE OF CHINA:

1. **Tropical monsoon:** In southern China (Ricazone)

2. **China Type/Temperate monsoon:** North and central China limited summers; rain and less intensity of summers.
3. **Manchurian type:** In north China with extreme winters.
4. **Continental semi arid :** All inter mountain regions, western interiors of China
5. **Montane climate**

VEGETATION:

- a) Ever green broad leave forest to the south coastal region (Southern China- Sandal and Tung)
- b) **Monsoonal deciduous:** south eastern coast with sal sagwan and mango.
- c) **Temperte deciduous:** north eastern China with poplar and elm
- d) **Montane**
- e) **Desert vegetation:** with semi arid steppes at the peripheral regions of Tibet and Sikkim valley with truly thorny bushes in Takla Makan, Gobi and Ordus desert.

SOIL

- a) **High latitude pemafrost sun soil:** In most of Tibet, Hen Chand and Altai mountains.
- b) **Desert soil:** The second most extensive, capillary action missing because of t emperature – soil lacks calcium.
- c) **Loess:** In and around Hwang Ho basin with the extension of the Shamo desert to Shansi province, growth of grasses have almost created Chernozem type of soil.
- d) **Alluvial soil:** The coastal belt associated with Manchurian great China and Sikiang plains.
- e) **Laterite soil:** In inland drainage region in interiors of China.
- f) **Montane soil:** Montane laterite, montane Podzolic and montane podsol.

POPULATION:

1. The most populous country of world with approximately 1236.7 million people distributed unevenly in geographical perspective.
2. A clear distinctive line can be drawn north to south to divide the country into densely

populated east (96% of population in 58% of land) and thinly populated west.

3. The pakhes of minor communities is located west of Kansu corridor (upper coarse of Hwang Ho)

AGRICULTURE:

Agro based country with 62% of population engaged directly in agriculture.

1. **Rice:** China is producing 30% of world's rice and 37% of Asia in the south eastern coast along Sikiang and the south eastern Yangtse valley.
2. **Wheat:** Producing 1/3rd of Asia. The important places Hwang Ho basin, red basin and the northern stretch of the great Chinese plain.
3. **Soyabean:** Largest producer of world with predominant producing zone in Manchurian plains and the Liatung peninsula used predominantly for oil production.
4. **Tea:** Poor quality tea (green tea) is produced in Sichuan basin.
5. **Cotton:** The cotton producing regions are associated with Yongse basin (Red basin), Dichuan basin (largest producer of Asia).
6. **Others:** Including sugarcane, potato, (Keoling and Sordham regions).
7. **Silk:** Prominent ancient producer with leading centres associated with Shantung peninsula Sikiang basin and Sichuan basin.

MINERALS:

Endowed with massive mineral resources.

- a) **Iron ore:** South Manchuria, Inner Mongolia.
- b) **Antimony:** leading producer of this non metallic mineral with prominent centres Wuhan and Gayan.
- c) **Tungsten:** Leading producer of Asia associated with Wuhan and Xinyang.
- d) **Copper:** Maximum in Unan plateau followed by Sichuan basin.
- e) **Lead:** Wuhan followed by Guoyang.
- f) **Coal:** Anthracite and bituminous variety predominantly clustered in Shansi province,

Sichuan basin, red basin Manchuria and Yunan plateau.

- g) **Petroleum:** Mineral oil reserves is associated predominantly with north west China as Qaidam basin, Zufran region which is connected to Sichuan basin via pipe line for transferring crude oil.

INDUSTRIES OF CHINA:

China is divided into different industrial regions on the account of clustering.

- 1) **The Manchurian Industrial zone:** With Fushun, Anshan and Chenyang as the prominent manufacturing creating “Mukden” triangle. This zone is the iron and steel centre. Metallurgy industries is in close proximity to coal and iron ore reserves.
- 2) **Beijing Tianjin region:** Known for metallurgical ship building, textiles and chemical industries proximity to Shanshi cold filed.
- 3) **Shanxi Baotou Region:** With important centres, Taizman, Datong. This is the iron and steel centre along with agriculture implement manufacturing.
- 4) **Lower Chang Jihang industrial region:** The oldest industrial cluster around Shanghai. Important cotton textile, iron and steel, ship building and oil refinery.
- 5) **Sikiang Industrial zone:** A secondary iron and steel centre, which is known for handicraft and food processing industry, centred at Guangzhou or Canton.
- 6) **Wuhan Industrial region:** Availability of resources with prominent industries of smelting electrical wire manufacturing concentrate.
- 7) **Sichuan industrial region:** Important centres as Cheng du and Chong Qing known for textiles, paper industries, marine tools.
- 8) **Lopnur region:** Nuclear zone of China.

TRANSPORT NETWORK OF CHINA:

1. Massive network of roads and railways is developed in the eastern zone of China.

2. Inland waterways have been developed by connecting important rivers – Yangtse and Hwang Ho – Yonhu canal and the lakes of south central China like Dongting and Poyang.
3. Among the international network, the road from Aksai Chin to Shanghai. The other road connected to Vietnam (Ho Chi Minh) via Hanoi to Beijing.
4. Other important roads: include the road from Chengdu to Beijing and from Quang Zhou to Shanghai and Zheng Chou.

Fisheries:

- 1) Both in land and marine associated with Yellow Sea, East China Sea, Liatung Bay, Gulf of Bohai with important centres as Anshan, Yantai and Ziangin.
- 2) Inland waterbodies like Dongting Hu, Koyang Hu, Zai Hu and Hongze Hu are the prominent fishing centres.

Important point of China:

1. Zianjin – port of Beijing.
2. Yangtse gorge is the biggest water power site in China.
3. Kuoyang is the second important hydro electric power station.
4. Shenyang is the Pitts berg of China (Iron and Steel industry).
5. Baotou is the first iron and steel centre outside the Great Wall of China.
6. Recently 2300 km railway from Beijing to Guang Zhou is developed.
7. The world’s largest artificial water way of 1000 km connects Hwang Ho, Huai He, Chang Jhang and Ho rivers.

JAPAN

Location: The crescent arc of the islands parallel to the mainland of Asia, Japan is located roughly between 25 North to 46° 12" West latitude and longitudinal extent from 125° east to 145° east. The island is made up of the fold mountain series extending parallel to the main coast. Japan is separated by the Sakhalin island of Russia by Perouse or Soya strait. The islands of Hokkaidu,

Honshu, Shikoku, Kyushu and Ryakuyu archipelago are located in this country.

PHYSICAL ASPECTS:

Mountains or Hills:

- a) 75% of the country is mountainous with highest elevation in Honshu island where Japanese Alps is located. The highest peak Mt. Fujishan 3776 m is volcanic peak of South Central Honshu.
- a) All the islands except Shikoku are marked with volcanic frequent activities owing to weak unstable crust.

Coastal low lands: Roughly occupying 15% of the land area, the coastal plains are the developed agricultural fields of Japan. Important plains are Iwanto plains (Yokohama), Kinkuj plains (Kobe), Nobi plains (Nagoya) and the plains of Kitakyushu. The coastal lowlands are highly zigzag with scattered patches of elevated features available. Among the minor plains in South Central Hokkaido and Ishittikari in eastern Hokkaido are important. The entire island ark is marked with regular seismic activities with the intense over comparatively irregular.

CLIMATE:

1. **Maritime climate:** Surrounded by water bodies in equable climate.
2. **Temperate monsoon:** North and central Japan.
3. **Sub tropical cyclonic climatic conditions** in southern Japan, Ryukyu and southern Ksuhsu.
4. **Montane.**

VEGETATION:

1. 58% of the land area is covered with forest.
2. 3 varieties of vegetation:
 - a) broad leaved forest on 46% of total forested area with bamboo as prominent product.
 - b) Mixed temperate on 26% of forest area with arge maple and fir as prominent varieties.
 - c) Coniferous forest with predominant spruce, pine and hemlock.

SOIL:

1. **Red laterite soil:** This soil is associated with broad leaved forest of Japan.
2. **Podsol:** All along the foothills of the islands extending upto coastal plains in form of mixed alluvial podsolitic soil.
3. **Podsol:** coniferous forest.

DRAINAGE:

Totally missing in prominent drainage profile. The minor rivers originating from mountains of the centre of island drain themselves to the surrounding water bodies. The important river of Hokkaido is Ishikari. In Honshu, the prominent river is Kilakani and Tone and Kyushu, Teshio. Among the prominent lake, largest is Lake Biwa on the east coast of central Honshu to the north east Kasumi.

POPULATION:

1. Densely populated country with 126.7 million people residing.
2. Unequal distribution of population with maximum crowding along the coastal plain areas.
3. Population per unit productive land is highest in Japan.
4. The settlement shows vertical profile of development.

AGRICULTURALACTIVITY:

1. 15% of the population is engaged in agriculture exclusively.
2. (a) The prominent primary activity is fishing in Japan with largest catch and consumption. (b) Hokkaido with Otaru and Abashiri as the important centres producing 25% of fishes followed by southern Honshu centred around Hamada and Shimonoseki. In Shikoku, Takamatsu is the important centre. In Kyushu, Nagasaki is the important centre.
3. Rice (a) A prominent agricultural output with third ranking is total production and highest per unit production. This crop is grown in 48% of total arable land predominantly in central and western Honshu, north western Kyushu and coastal Shikoku.

(b) In accordance to the location of rice cultivation site coastal rice Mata, 9 mountains Chota and swampy regions Ja.

4. Cotton: Predominantly associated with Shikoku around Kochi.
5. Soyabean: Predominant in Hokkaido around Mombetsu.
6. Tobacco: Totally under government control is cultivated in Otaru, Hokkaido and Iwaki.

MINERAL RESOURCES: The country lacks in major resource base required for industrial development.

- a) **Iron ore deposits** are associated with north western Honshu.
- b) **Coal deposits** in north western Kyushu (Chikukho basin) and Tsushima island and Hokkaido in Ishikari plains (bituminous and lignite type).
- c) **Mineral oil:** Akika and Niigata (Honshu) are prominent mineral oil field of Japan.
- d) **Others:** Copper (Tokyo), lead and zinc (Ogaki – central Honshu). Gold and silver in scattered places deposits form and mostly the byproduct of smelting.

INDUSTRIAL DEVELOPMENT: Prominent industrial pocks have developed in Japan.

1. **Kwanto plains:** (a) Including the industrial cluster of Tokyo, Kawasaki and Yokohama.
- (b) Also called as **Keihin plains**. The prominent industries of this region is iron and steel followed by textile engineering, chemical and ship building.
2. **Ishibay or Nobi plains:** Including Nagoya, Gifu, this centre is the textile heartland alongwith machine tools and automobile industries.
3. **Kinki plain or Hanshin industrial region:** Including Osaka, Kobe and Kyoto known for ship building, textile, iron and steel and handicraft.
4. **Northern Kyushu:** Including Kitakyushu and Nagasaki – ship building, iron and steel, machine tools and glass manufacturing.
5. **Others:** Muroran in Hokkaido and Hiroshima in Honshu are the other prominent industrial

cities with textile and machine tool industries.

TRANSPORT:

1. Rail network is well developed with public sector for goods transportation and private for commuting. The rail track between Tokyo and Osaka is the most prominent high speed rail track.
2. Inland waterways is restricted to the coastal areas.
3. Road network connects all the major industrial cities as well as the prominent cities within an island.
4. Airways is also important.

IMPORTANT FACTS ABOUT JAPAN:

1. Highest cropping index of world – 191%.
2. Nippon is the traditional name of the country.
3. Tokyo and Yokohama followed by Kawasaki are cities with heaviest population concentration.
4. Kobe is the important post of overseas traffic.

SOUTH ASIA

LOCATION:

1. Consisting India, Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka and Maldives, it roughly stretches between 5° North to 37° North and 61° East to 98° East.
2. In terms of area, India 73.2%, Pakistan 17.8%, Bangladesh 3.3%, Sri Lanka, Bhutan and Maldives the rest.

PHYSICAL FEATURE:

1. **Mountainous world:**

- a) **Western Mountain region:** (i) Hindukush, Sulaima alongwith salt range Tobo and Kakar range, central Brahmi, Kisth central Makran, Siachen range, Raskoh are the prominent ranges.
- (ii) **Associated inter mountain region** includes Sialkot plateau, Potwar plateau of Baluchistan (the desert of Dast-e-Tehlab) and saline marshes of Hamun-e- Mashkil is located.
- b) **Northern Mountain/North eastern mountain:** It includes Karakoram, Laddakh, Zuskar Kailash range and the Himalayan

ranges (Himadri, Himachal – Pirpanjal, Dhauladhar, Nagtibba, Garhwal, Kumaon, Mahabharat ranges, Shiwalik), Purvanchal hills (Dafla, Abor, Miri, Mishmi, Patkoi Bum, Nago, Mishai, Mizo).

2. **Old plateau:** Peninsular plateau of India.
3. **Plains:** Indus, Ganga, Brahmaputra, West Coast, East Coast plains, Coastal plains of Sri Lanka and Tarai in Nepal.
4. **Deserts:** (a) Thar desert (in western India with 150 to 380 m of height above the sea level. (b) Thal desert in southern Punjab and Sindh province of Pakistan with prominent dry conditions in Bhawalpur and Nara along with Baluchistan desert to south west.
5. **Islands:** Of Arabia Sea includes Lakshadweep and Maldives (coral origin); Bay of Bengal – Sri Lanka and Andaman Nicobar islands.

PHYSIOGRAPHY OF SRI LANKA:

- a) **Central mountain:** (i) The steepest mountainous profile to the south central part. (ii) sloping steeply towards south where it is designated as worlds end. (iii) The highest peak Mt. Pedro (Pidurutalagala) and Adams Peak.
- b) **South west basin:** It is marked with scattered mountains of Rakwana and Bulfora with coastal plain area.
- c) **Eastern basin:** Marked with Inselburg as the oldest relief feature of Sri Lanka.
- d) **Northern plains:** (i) Truly calcareous rock strata marked with large number of rivers and thus the alluvial deposits scattered. Inselburgs are visible in this also. (ii) The rivers provide the example of radial drainage with Kala Asuvi and Yan draining to the north.

CLIMATE OF SOUTH ASIA:

1. Tropical monsoon
2. Mountainous
3. Sub moist interiors
4. Arid and semi arid or desert climate

5. Mediterranean (Pakistan in North western stretch)

VEGETATION:

1. Evergreen: South western India, Andaman and Nicobar, north eastern hilly regions of India.
2. Monsoonal deciduous.
3. Littoral or mangrove.
4. Mountainous.
5. Desert.

SOIL:

1. Alluvial soil – river valleys
2. Laterite – dense forested areas
3. Black soil
4. Red soil
5. Sandy soil
6. Mountainous soil

ECONOMIC ACTIVITIES:

Agriculture:

- a) **Fisheries :** (i) Both fresh and saline water fisheries along the western coast of India, West Bengal, Orissa and Bangladesh.
- b) **Crops: Pakistan:** (i) 72% of population is engaged in agriculture of the total land area. (ii) Wheat in Punjab, Sialkot, Gjrawala; Maize in Gujarat, Gujrawala and Sialkot; Jawar – Hyderabad, Gujarat; cotton – Indus valley with Lahore, Sialkot, Multan as important centres.
- Bangladesh:** (i) 80% of population engaged in agriculture with 2/3rd of the land being arable. (ii) Jute and rice in delta region; tea in Chittagong; sugarcane in entire Padma valley.
- Nepal:** (i) predominantly lacks in arable land – 16.4% of total land area. (ii) 88% of population is engaged in primary activities. (iii) Tarai region and central valley is marked with crop cultivation. (iv) The valleys of rivers like Arun Kosi, Sapt Kosi, Sharda, Karnali and Kali Gandak is the destination of subsistence farming. (v) rice and wheat are the prominent crop.

Bhutan: Wheat and rice with prominent land lord system still persisting.

Sri Lanka: (i) 45% of population directly engaged in agricultural activity on 33% of land area.
(ii) Prominent products rice, coconut, rubber and tea.

MINERAL RESOURCES: Lesser concentration of mineral resources in terms of population concentration and size.

- 1. Iron Ore:** Chottanagpur region, Karnataka Baba Budaan and Bellary, Tamil Nadu – Salem and Rajhara hills, Chattisgarh are prominent iron ore centre of this region.
- 2. Mica:** Kodarma, Giridi in Jharkhand (Bengal ruby) Andhra Pradesh (Vishakapatnam and Nellore – green mica) Rajasthan (Udaipur and Bhilwara).
- 3. Copper:** Chottanagpur region with Singhbhum Khetri (Rajasthan), Baluchistan (Pakistan).
- 4. Coal:** (i) India leading producer in South Asia.
(ii) 2 variety of coal available (temporal) (gondwahal 98% and tertiary 2%)
(iii) Regions Chottanagpur, Damodar valley, Son valley, Godavari and Mahanadi valleys.
Tertiary scheme, Rajasthan, Bikaner, Lakhimpur in Assam. Pakistan – Rawalbindi and Hyderabad has major Gondwana coal deposit. Bangladesh – Fardipur and Rangpur.
- 5. Mineral oil:** Digboi, Susma valley (Assam), Ankaleshwar, Khambatt (Gujarat), Karachi Rawalbindi (Pakistan) are the prominent centres.
- 6. Rock salt:** Pakistan leading producer.
- 7. Natural gas field:** Pakistan (Siri)

INDUSTRIES:

- 1. Iron and Steel Industry:** (a) India
(b) Pakistan – Hyderabad, Multan and Karachi.
(c) Bangladesh – Chittagong.
- 2. Cotton textile Industry:** **India** – Mumbai, Ahmedabad, Nagpur, Salem, Coimbatore, Bangalore, Howrah and Ferozpur in Punjab.
Pakistan – Karachi, Lahore, Hyderabad, Multan.

Bangladesh – Dhaka and Narain Ganj.

- 3. Woollen textile: India** – Punjab, Haryana and Maharashtra.

Pakistan - Karachi, Dera Gazi Khan and Multan.

- 4. Jute textile: Bangladesh** – Narain Ganj, Chittagong

Pakistan: Kokri

India – Entire Hoogly belt

- 5. Fertilizer industry: India** – Pimpri, Bijapur, Gujarat, Vadodara, Ankaleshwar, Kalol, Nangal, Panipat, Sindri

Pakistan: Lyalpur and Multan.

- 6. Sugar industry: India** – Maharashtra (Sholapur, Kolahpur, Pune), Uttar Pradesh (Sahranpur, Meerut), Tamil Nadu (Salem and Coimbatore)

Pakistan – Mardan, Karachi and Lyalpur

Bangladesh – Dhaka and Kishore Ganj

TRANSPORT: Well-defined road rail network is there in India connecting all the major cities alongwith the extreme ends of the country.

Ports: All along the coastal stretch has been developed with developed winter land.

Airways: Indian Airlines, Air India, Pawar hans providing the indigenously built services with prominent development of international airport.

Pakistan – The transport network is limited to the eastern plains of Indus rives.

Bangladesh – Much developed inland waterways is associated with this country.

ANGLO AMERICA

LOCATION:

- The third largest continent of the world surrounded by Arctic, Pacific and Atlantic Oceans.
- It is identified with 3 distinctive 0parts of USA (25° N to 49° N and 67° W to 125° W), Canada (42° N to 87° N and 52° W to 125° W) and Alaska (55° N to 71° N and 130° W to 179° W).

PHYSICAL FEATURES:

A. Western Cordillera:

- a) **Alpine series of mountains:** (i) Running as parallel ranges with Rockies as prominent range.
- (ii) In Alaska, Brooks, Arnica and Alaskan ranges are located.
- (iii) In south central extension markings mountains tapering south to main Rockies is located.
- (iv) Parallel to Alexander Archipelago coast range extends upto the border of USA and Canada followed by Cascade range (Blue mountains) which nearly 40 North latitude gets divided into Sierra Nevada to East and coast range to west.
- b) **Inter montane plateaus:** (i) The parallel ranges surrounds several inner montane plateaus like Yukon plateau, Columbia plateau and Colorado plateau. Yukon plateau is marked with the Yukon river system and it extends upto British Columbia. Columbia plateau stretches between Fraser and Snake rivers to the north and Lake Mead to the south.
- (ii) In between Share and Colorado, semi arid great basin with death valley is located.
- (iii) In between Colorado river and Rio Grande river, Colorado plateau is located which is a semi arid region known for Grand Canyon.
- c) **Other ranges:** Franklin mountains, bitter root, mountains, Waratah range Sacramento range, Laramie, Caribou, Selkirk are the other mountain ranges associated with cordilleras.

B. Appalachian Mountains:

- i) Old complex relief structure extending from St. Lawrence valley parallel to the coast upto the Gulf coast where it is almost covered by the alluvial deposits of Pleistocene epoch.
- ii) To the north Appalachian mountain has Notre Dam, Catskill and Adirondack Mountains.
- iii) To the centre Appalachian and Cumberland plateau are separated by Mohawk valley.
- iv) Further west Allegheny mountains are located towards south east Blue Ridge mountains

followed by Pied Mont plateau and coastal plains are located.

- v) The rivers creating fall line provides the prominent site for Jaro electricity development along the coastal plains.
- vi) To west central part, the Gneiss, Sicht, Ozark plateau is located which has been separated from main range due to coal and mineral oil deposits.

C. Central Plains:

- i) Unlike the other plains of the world, these are undulating plains gently rolling from western Cordilleras towards east but is marked with fertile soil.
- ii) To the north, Markinze valley mark the Tiara region with perma frost condition near its mouth.
- iii) From north Saskatchewan to Missouri river is the temperate grassland called prairies which includes rivers like south Saskatchewan Yellow stone, Red river and is famous for wheat cultivation.
- iv) South of lake Winnipeg, a geological lake called Aagasis is identified which has been filled by red river to create agasis plain.
- v) Mississippi, Missouri and associated Gulf coast plain are the most fertile and flat region of Anglo America.
- vi) St. Lawrence river creating narrow stretch of plain east of the Great Lake region uptill its gulf.

D. Canadian shield/Labrador/Laurentian Plateau:

- i) Acratonic magma built highland located around the Hudson Bay.
- ii) To its north-north west Great bear, Great Slave Athabaskan and Winnipeg to the west is located.
- iii) The plateau is covered with coniferous forest and gradually paves way to the coastal plains around Hudson Bay.
- iv) Drained by several rivers like Nelson Hayes Severn, Albany.

- v) The shield marks its extension as the submarine basin beneath Hudson Bay including Fox peninsula and Ungava basin.
- vi) The island areas marking Ellsmere Baffin and Victoria, New Foundland to east and Alexander Archipelago, Queen Charcrote island are the peaks of submerged mountains and Vancouver marks the part of minor plate Juan de Fuca.

DRAINAGE:

Canada: Mackenzie North, Fraser west and Red river centre with St. Lawrence to east associated with series of lakes.

U.S.A.: Yukon, Columbia with Snake, Salmon Colorado with Gila, Sacramento with valley of California, Hudson, Rio-Grande and Mississippi, Missouri system.

CLIMATE:

- (i) **Arctic or Tundra:** Northern Alaska and Northern islands of Canada.
- (ii) **Cold continental:** To the interiors of Alaska and Northern Canada.
- (iii) **Cool and temperate maritime:** From southern Alaska to California coast.
- (iv) **Warm temperate west margin:** The northern California
- (v) **Warm east margin or tropical marine type:** In Mexican or Gulf of Mexico coast.
- (vi) **Humid continental/Laurentian type:** In the north eastern Anglo America due to air mass impact.
- (vii) **Arid semi arid climate:** Great basin, Colorado basin and Columbia plateau with semi arid to extremely dry climatic condition.
- (viii) **Mountainous climate:** Marked with 3 level – Tierracaliente, Tierra Templada and Tierra Aria.

NATURAL VEGETATION:

- (a) **Coniferous:** Gregarious (extensive) growth of coniferous forest with pine Hemlock larch, Bolson, spruce.
- (b) **Mixed forest:** South east Canada and north east USA with chestnut maple oak, ash poplar.

- (c) **Temperate moist evergreen:** In central and south eastern USA.
- (d) **Mediterranean:** Western coast California evergreen stunted trees. Mediterranean vegetation is also called Chaparral.
- (e) **Grassland:** Prairies (North Saskatchewan to Yellow stone)
- (f) **Desert vegetation.**
- (h) **Mountainous.**

SOIL:

1. Alluvial
2. Podsol
3. Podsollic
4. Laterite – Florida coast
5. Red soil – east of western Cordillera
6. Chernozem
7. Lava clay in Alaska
8. Sandy soil - Arizona

AGRICULTURE:

- 1. Wheat:** (i) 20% of world's wheat is produced in this region.
- (ii) It is the leading crop in Canada and second most important crop of USA.
- (iii) The important centres of wheat production in USA extends from Red river to the Mississippi basin with Duluth as the prominent marketing centre. It is designated to be bread basket of world.
- (iv) Minnesota is the important state associated with wheat production and Port Arthur is the wheat port of USA.
- (v) Other producing centre includes Philadelphia, Chicago, Columbia and California.

Canada: The important wheat producing centres are Winnipeg, Arthur and is exported from Montreal, St. Johns Halifax

- 2. Maize:** USA the leading producer with important centres Nebraska, Missouri, Minnesota, South Dakota and the Piedmont region.
- 3. Cotton:** Long staple or sea island cotton is produced in this region. The lower Mississippi valley, Alabama, Georgia are the important centres of cotton.

4. **Tobacco:** Production accounts for 1/4th of the world in Kentucky, North Carolina, Tennessee and Ohio.
5. **Fruits:** (i) In the truck farming zones, fruit cultivation is prominent.
(ii) In Canada, the southern region marked with population clustering has fruit cultivation zone with citrus fruits and apple.
6. **Animal rearing:** (i) In Canada, Winnipeg, Vancouver and Montreal are the important animal rearing centre.
(ii) In USA dairy farming is associated with Great Lake region centred around Buffalo.
(iii) For beef products, rearing of animals is carried on in the Great Basin and New Mexico.
(iv) Rearing of sheep for both wool and mutton is also associated with this region.
7. **Fishing:** (i) **Freshwater:** In Slave, Great Bear Lakes, Mississippi, Missouri, Fraser, St. Lawrence and Saskatchewan river, important catch includes herring, pickerel and perch.
(ii) **Marine fishing:** Three important centres of marine fishing are identified:
 - (a) **East and north east region:** Centred around New Foundland, Labrador, Novo Scotia, New York, Boston, Portland, St. Jones, Montreal and Halifax. Important banks include Grand Bank, George Bank, Sable, St. Vero and Bikie Vero. Important catch – cod, haddock, halibut.
 - (b) **West, north west:** Associated with belt extending from California to Alaska with important centres Seattle, Vancouver, Queen Charlotte island, Prince Roupert, Portland and important catch – salmon, halibut.
 - (c) **Gulf region:** Known for shrimp with important centre New Orleans.

MINERALS: This regions account for 38% of total mineral resources of the world.

Iron Ore: Magnetite and Hematite variety of iron ore is predominantly extracted.

USA: 15% of total world's production located along (a) Lake Superior in Minnesota, Wisconsin and Michigan with 6 prominent ranges Mesabi, Vermilion, Gogobik, Kyuna,

Market and Manomiti. (b) Appalachian: New York, Pennsylvania, New Jersey, Alabama, T e x a s have iron ore reserves associated with Appalachian. (c) **Others:** New Mexico, Utah, Nevada, Wyoming.

Canada: Nova Scotia, New Foundland, Ontario region and Quebec.

Coal: Anthracite and bituminus variety of coal is associated with this region.

USA: Pennsylvania, Kentucky, Alabama are the prominent centres with scattered centres associated with Michigan, Indiana, Illinois, Kansas and Iowa.

Copper: USA: Michigan, Montana, Arizona, New Mexico, Utah, Prono, Nevada.

Canada: New Foundland, Sudbury and Ontario.

Gold: Canada: Fraser river basin with Kutney and Klondike mines Quebec.

USA : Yukon valley and western Cordillera with Boise in Idaho, Carson city, Nevada.

Silver: Sudbury in Canada and western Cordillera in association with gold.

MINERAL OIL:

USA: Leading producer of the world with 38.7% of production.

(a) Appalachian region with New York, Virginia, Kentucky as important centres. The triangular zone between Ohio, Mississippi and great lakes marks the important mineral oil centre.

(b) Florida: Unciana and California are the other prominent centres.

Canada: Sudbury, Ontario, Mackenzie valley, Edmonton, Calgary, Norman wells are the important centres.

NUCLEAR MINERALS

USA: Western Colorado, eastern Utah, Wyoming are the important nuclear centres with Pittsburgh as the shipping port of nuclear energy.

Canada: The nuclear plants in Canada is associated with Kamloops and Vancouver on the west coast.

INDUSTRIES:

- USA:** a) Predominant concentration is associated with the Great Lake region and the eastern coast of the country,
b) Almost every type of manufacturing is located in this region.

Region:

- (i) **New England:** The oldest industrial cluster comprising Connecticut, Rhode Island, Vermont and Massachusetts along with the small centres of Maine and New Hampshire. Electrical equipment manufacturing, printing and engineering work are associated with this region.
- (ii) **Mid Atlantic** extending from New York to Baltimore, this belt comprises densely populated metropolitan chain with New Jersey, Pennsylvania, Maryland, Delaware and Philadelphia. It includes electrical equipment manufacturing, automobiles, chemicals and cigar. (Pennsylvania and Baltimore - iron and steel as the important industries).
- (iii) **Pittsburgh Erie region:** The region associated with Appalachian coal mines and mesa hills for iron ore is the iron and steel centre of United States of America. Wheeling, Young warren, Cleveland are the important industrial centres. Acron is known for synthetic rubber producing industries, Buffalo, the largest flour mill of USA and Toledo, the tyre making centre.
- (iv) **Detroit:** The automobile centre located to the west of Lake Erie, it includes flint Lansing, forth Wayne as the important industrial centres.
- (v) **Lake Michigan:** Centred around Chicago, this industrial region is marked with varied industries ranging from iron and steel, meat packing, agricultural machinery to footwear production. Important centres includes Milwaukee (Engineering industries), Gary (Iron and steel).
- (vi) **Southern Appalachian:** Centred around Bishmingo, this industrial cluster is marked with cotton textile engineering, machine manufacturing industries. Important centres includes Gadblen, Columbus and Birmingham.
- (vii) **Eastern Texas:** With Dallas, Fortworth, Houston, this industrial cluster is based on the oils

available in Texas state Dallas and Fortworth are twin cities. Houston is oil-refining centre.

(ix) Others: Kansas for oil refining, St. Louis for meat packing, Indianapolis footwear, St. Paul - food processing, and Minneapolis for smelting. San Francisco, Los Angeles, San Diego and Seattle for lumbering, fishing, aluminium, smelting and electrical goods.

Canada: The main industrial belt stretches from lake region to Montreal. The important centres includes:

- (a) Toronto – engineering and automobiles.
(b) Hamilton is Birmingham of Canada and iron and steel industries.
(c) Sarina is the oil refining centre
(d) Windsor – Detroit of Canada.
(e) Kingston - locomotives
(f) Montreal – ship building and oil refinery
(g) Quebec – ship building
(h) Ottawa – saw mills and paper industries
(i) Winnipeg – wheat milling
(j) Edmonton – oil extraction
(k) Vancouver – metal smelting and fishing.

TRANSPORT:

Canada: Known for Trans Canadian railway and Canadian pacific railway

Trans Canadian or Canadian national railway – under government control extending from St. Louis to Vancouver via Spatlese, Quebec, Montreal, Ottawa, Sudbury, Winnipeg region, Medicine Hat, Calgary and Vancouver.

Canadian Pacific Railway (CPR): Private ownership connecting Halifax to Prince Rupert via Quebec, Montreal, Ottawa, Sudbury, Winnipeg, Saskatoon, Edmonton, Prince George and Prince Rupert.

USA: Northern Pacific (NP): From Chicago to Seattle via Milwaukee, Minneapolis, St. Paul, Bismarck, Seattle.

Central Pacific: From Chicago to San Francisco via Sacramento, San Francisco.

Southern Pacific or Santa Fe: From Chicago to Los Angeles via Tropica, Kansas City, Wichita, Santa Fe, Los Angeles.

Gulf Railway: From Chicago to New Orleans, via St. Louis, Memphis, Jackson to New Orleans which has further stretched to join Houston.

IMPORTANT FACTS

1. Grand Kouvedam on Columbia.
2. Hoover, Parker and Imperial on Colorado.
3. Quebec was the first settled city of Canada.
4. Canada leads the world in the production of newsprint and beverages.
5. Toronto is the largest city of Canada.
6. Mt. Logas is the highest peak of Canada.
7. Kansas is the wheat state of USA.
8. Winnipeg is the wheat port of Canada.
9. Cod is the main catch of Grand Bank.
10. Montreal is the first capital of the world.
11. Golden Horseshoe of Canada is Toronto to Hamilton.
12. Coleus des prairies – Dakota.

OCEANIA/AUSTRALIA:

1. The southern most habited continent is roughly located between 10° 40' south to 43° 40' south and 113° east to 153° east. Tropic of Capricorn passes from centre of this continent and is separated from Indonesia by Timor sea and Asafura Sea. From Papua New Guinea by Torres strait, from New Zealand, Tasman sea from Antarctica Indian Ocean.
2. Australia have been designated as Island Continent, last of the lands and last frontier.

PHYSICAL FEATURE: 6.5% of land area is mountainous, 54% plateau, 23% plain and 16% coastal plains.

1. Mountain:

- A. From St. Torres Strait to Tasmania, the most extensive mountainous stretch is located. Great Dividing Range – stretching for 4500 km, its eastern slope is much steep divided into four parts:
- (a) **Cape York Peninsula** where from Townville to look town Bellenderfir and Vellender fir ranges are located.
 - (b) **New England range:** In New South Wales, whole extension towards west is identified as Monaro plateau.

- (c) **Blue mountain:** The extension of New England Range, which is known for Georges Lake located north of Canberra.
 - (d) **Australian Alps:** The highest range of the Great Dividing Range with Mt. Kosciusko, 2228 m and is the origination point of Murray river. It is extending via Bass Strait to Tasmania as Cardial range.
- B. **MacDonald Range:** With the highest peak of Mt. Zeil, this range extends towards south as Arunta block.
- C. **Mus grave Range:** With highest peal of Mt. Woodroffe and southern extension of Birth plateau.
- D. **Hamersley Range:** Its extension Kanab range with highest point Mt. Bruce.
- E. **Flinders Range:** With its bifurcation, broken and barrier ranges, the northern extension of Grey Range ultimately joining Great Dividing Range.
- F. **Darling Range:** With Victoria and Sterling mountains.

Plateaus: Kimberly, Arnhem, Barkley Table land, Antrim Block, Arunta Block, Yelgrim plateau and Monaro plateau are included in this category which are marked with Palaeozoic rock strata with 150 to 600 m of height.

Plains:

- (a) **Murray Darling plains:** The alluvial plain stretching in southern Queensland, New South Wales, Victoria and East Southern Australia.
- (b) **Lake Eire plains:** The inland drainage basin extending in south central part of Australia has Lake Eire at its centre which is 12 m below the sea level. This zone is known for artisan wells.
- (c) **Carpantaria plain:** The sedimentary rocks covered by marine deposits have created this plain. Its southern extent near Selugura range is marked with artisan wells.
- (d) **Nullarbor plain:** The elevated extension of Great Australian Bight which has facilitated the development of inland ports like Port Augusta,

its northern boundary is marked by the Great Victoria desert and this region is known for animal rearing particularly sheep.

- (e) **Coastal plains:** From Geraldton to Darwin, narrow stretch of coastal plain of alluvial origin is located. These are the fertile coastal areas of Australia.

Great Barrier Reef: Of the coast of North eastern Australia, the most extensive organic reef is located which is 1900 km in length from Torres Strait to Fraser island and 20 to 240 km away from the coast. It encloses several lagoons and islands as Coral Sea Island of Australia.

NEW ZEALAND

Physical features: A mountainous country with three distinctive physiographic division:

- 1. Volcanic cones:** Egmont is the extinct volcano, Ruaphaue, Negruho and Tongaria – highest peaks.
- 2. Northern Island:** (i) It has the extension of the mountain ranges like Rau Kuman, Koi Manava and natural park mountain, which is having the three active peaks.
(ii) **The coromandal peninsula** – plain fertile.
(iii) **Auckland peninsula:** The part of Coromandal with isolated mount and drained by Waikato river.
(iv) **South eastern peninsula:** Marked with hard crystalline rocks and has developed due to subsidence creating Willington harbour.
- 3. Southern Island:** (i) Predominantly covered with southern Alps with Mt. Cook, 1764 m as the highest peak – it is a water divide between Canterbury plains and Westland.
(ii) Known for exclusive glaciers with Tasman glaciers with 29 km of length is associated with Mt. Cook to the eastern slope Goodley and Hooker and to the western slope Foxe France and Joseph are the important glaciers.

DRAINAGE PATTERN: Unclear draining pattern is developed in this region.

- 1. Murray Darling Drainage system:**
Originated from Australian Alps and New England respectively, these rivers drain in

Strait of Victoria. The prominent tributaries include Murran Bridge, Lachhalan and Warrego.

- 2. Inland drainage:** In lake Eyre, the prominent rivers are Thompson, Cooper and Diamantina.
- 3. Coastal drainage:** Murchison, Gascoyne, Fortescue, Fitzroy, Victoria, Flinders and Michelle.

AFRICA

Position and size: Africa is the second largest continent of the world; stretches for approximately 35° on each side of the Equator, and is crossed by both the tropics.

Periphery: North – Mediterranean Sea, East – Indian Ocean, Red Sea, West – Atlantic Ocean, South – Antarctic Ocean.

Physical Features: Africa is a plateau continent having very ancient crystalline rocks.

In the North Western Part: Lie the ranges of Atlas Mountains which belong to the Alpine Mountain System of Southern Europe and are folded mountains.

In the Southern Part: Lie older fold mountains, i.e. the Swart Bergen and Lange Bergen Mountains.

In North: The Tibesti and Ahaggar Mountains of the Sahara make some prominent features.

In East: The Volcanic comes such as Kilimanjaro, Mt. Kenya and Mt. Elogan are located in East Africa.

Ethiopia is marked by a series of lakes like Lake Abaya, Lake Rudolf, etc.

A large part of the plateau consists of a number of large basins, separated by divides.

Climate: Africa, climatically can be divided into 7 regions: (i) Rainy tropical, (ii) Wet and dry Savannah (Low and High), (iii) Tropical Steppe, (iv) Tropical desert, (v) Humid Subtropical, (vi) Mediterranean and (vii) Undifferentiated Highlands.

Ocean currents:

- (a) **The cold canaries and Benguela current** along the west coast of Africa have a cooling effect on neighbouring coast.

(b) **The Warm Mozambique Current** tends to warm southern coast.

Tropical Deserts:

i. **Somali desert** of Somalia

ii. **Dankali desert** of northern Ethiopia, Namibia and Kalahari.

Note: Bunch grasses and scrubs are the only vegetation of this climate.

People of Africa:

(a) Arabs, Berbers, Tuareg of desert : North Africa

(b) The Pigmies : Congo Basin

(c) The Bushman : Kalahari Desert

(d) The Hottentots : South West Africa

(e) The Ovambo tribes : South West Africa

(f) The Herero : South West Africa

Some important information about Africa

- Major Safari Centre: Kenya
- Rich Mineral district of Zaire : Katanga
- Chief gold mining area of south west Africa Witwatersrand
- Country that is Coptic Christian and Muslim Ethiopia
- Large lake in Sahara : Chad
- Highest Mountain of Africa : Kilimanjaro
- Country having highest percentage of nomadic herders : Somalia
- The coasts of North west Africa and South West Africa (cape Town) has Mediterranean type of climate
- River Congo crosses the equator twice
- Island noted for spice exports : Zanzibar
- Zaire is the leading producer of diamond and gold
- Congo has the greatest hydroelectric potential in the world.
- Common lingua franca across Eastern Africa :Swahili
- Ghana was formerly known as ‘Gold Coast’ (British colony).
- Nigeria is known as ‘Land of Palm Oil’.
- Lake Tanganyika: A rift Valley Lake, world’s deepest lake (Kenya).
- Most populated country of Africa is Nigeria.

- ‘Esparto Grass’ found in North Africa is used for paper making.
- The Aswan Dam is situated on River Nile.
- ‘Port Said’ is the Northern Entrance to Suez Canal.
- People of Katanga (Zaire) are known as Kasai Baluba.
- Egypt is junction of the two continents, Asia and Africa.
- To the west of Uganda, are the snow covered mountains of the ‘Ruwendari Range’ known as ‘The Mountains of the Moon.’
- Zanzibar and Pemba islands are well known for cloves.
- Tanzania is well known for the ‘Sisal hemp’.
- Coffee is produced by the progressive ‘Chagga’ Tribes on the fertile slope of Mt. Kilimanjaro.
- Kariba Dam famous for H.E.P. is on River Zambazi.
- Mozambique has the widest coastal plain in Africa.
- Mozambique Channel separates Madagascar from Africa.
- Cairo, the capital of Egypt, stands at the tip of the Nile deltas.
- The whole savannah belt forms the actual Sudan, a word meaning ‘the land of the Blacks’, so called because of its Negro population.
- River Nile is the longest river of Africa, emerging from Lake Victoria and draining into the Mediterranean Sea.
- A high class Arabian Coffee is produced in Ethiopia.
- South Africa is the leading producer of maize in Africa, followed by Egypt.
- Cotton is a leading export item from Uganda. Africa has in all, 53 countries big and small.

Mounains and Plateaus:-

1. Atlas :-runs from Morocco to Tunisia covering 1931, kms several cordilleras, Tell

- Atlas are well watered and forested slope
High peaks as Jebel Taukal (4165kms).
- Ahaggar :-Volcanic intro desert upland, projected due to marked subsidence of surrounding basin.
 - Tibesti:-Volcanic Plateaus formed due to magma rising from old hot spot.
 - Great Escarpment:- Marks the Southern boundary of Africa's basement rocks including Drakensberg 160 million year ago with fragmentation of the Gondwanaland its development is identified.
 - Adamawa highlands:-The fold mountains of Cameroon ridge incorporating volcanic massif which is active.
 - Ethiopian highlands:-Formed as the Molten rocks pushed up the surface of the Earth and then solidified.
 - Mitumba and Muchinga:-Block mountains along great rift valley with sloping sides.
 - Little and great Karoo upland:- Sedimentary rocks composed upland which marks folded profile.
 - Drakensberg:-Volcanic lava peak of 250 million year ago and folded strata.
 - Bush veld:-Formed by molten magma intrusion into the earth's crust creating saucer shaped feature containing regular layers of precious minerals.
 - Khomas/Khorixas:-The remnant of former upland characterized with finger rocks (five million year ago).
 - Katanga Plateau:-Ancient rocks associated upland holds immense and varied mineral reserves- copper.
 - The Vast Eastern Plateau:- Lies between eastern and western rift valleys, represents pen plain with marked inselbergs (Kenya, Uganda and Tanzania).

Lakes:-

- Lake Chad:-Remnant of an inland sea, series of drought since 70's have reduced the area to 2599sqkms.

- Lake Nasser:-High artificial lake created by damming of Nile, now setting due to immense evaporation.
- Lake Volta:-Artificial lake created by damming of Volta, links drier northern areas with coast and provides fresh water.
- Lake Tanganyika:-World's second deepest lake, is largest of series of ribbon lakes occupying trench for approx 644kms of the western arm of Great Rift Valley.
- Lake Victoria:-It's world's second largest lakes in terms of surface area, in the rift valley containing numerous islands and coral reefs.
- Lake Nyasa:- One of the deeper lakes of rift valley approx 920mts (Malawi is the older name).
- Lake Turkana:- Lake Turkana, formerly known as Lake Rudolf, is a lake in the Kenyan Rift Valley, in northern Kenya, with its far northern end crossing into Ethiopia. It is the world's largest permanent desert lake and the world's largest alkaline lake.
- Makgadigadi Swamp:-The inland delta of Okavango river marked up with several distributaries in Kalahari desert.
- Etosha Pan:-Excessive evaporation has produced one of the largest salt pans with marked river and lake sediments.
- Lake Kariba:-The man made lake developed along the river Zambezi along international boundary of Zambia and Zimbabwe.

Deserts:-

- Grand Erg:-Occidental and oriental are one of the largest seas of the world. Hammadas and desert pavements are also important features.
- Sahara:-Largest hot desert of the world, marked with uninterrupted stretch of sand dunes.
- Sinai:-Incorporating Sinai peninsula, with large number of worlds.
- West Sahara:-Desert landscape with huge reserves of commercially valuable phosphate reserves.

5. **Libyan Desert:**-Desert landscape with major priced oil because of its low sulphur content (less pollution level).
6. **Sahel:**-Region around Lake Chad incorporates vast sand flats, lake has shrank.
7. **Sudan (Nubian):**-Rigid basement rocks with sand cover paving way to semi arid (40mts) Sudd region.
8. **Kalahari:**- Largest continuous sand surface with iron oxide prominent red colour.

Rivers :-

1. **Nile:**-Longest river of the world, facilitating fertile valley of Egypt.
2. **Niger:**-4181kms long on plateau of Guinea, where it supports rich fish stocks. On desert through Nigeria (crops and livestock).
3. **Congo:**-Second largest river crossing equator twice. Known for large number of falls and rapids.
4. **Orange:**-One of the longest rivers of Southern Africa which rises from Lesetho to drain into Atlantic Ocean.
5. **Okavago/Cubango:**-Flows from Bie plateau to swamp land of Okavango delta, one of the world's largest inland delta.
6. **Zambezi:**-East flowing, southern African river known for its swift flow and carving out deep gorge along the basalt joint forming Victoria falls.

FORMER USSR

The former USSR has now been dissolved into 15 independent countries. Except Latvia, Lithuania and Estonia, 12 nations have formed a Commonwealth of Independent States (CIS). These occupy the eastern half of Europe and the whole central and northern Asia.

Physiographic Regions:

- 1) **Russian Plain:** Covers the greater part of European Russia. It continues across the Urals towards the vast lowlands of West Siberia and stretches towards the south in the desert basin of the Arabian Sea.

- 2) **Western Siberia:** Lies between the Ural mountains and the Yenisey River. Two rivers flow – Obe and its tributary, Irtysh. Its southern end is Kazakh Upland and South Ural and towards south east it has border with two mountains, Altai and Sayan mountain system.
- 3) **Central Siberia:** Lies between the Yenisey and Lena rivers. Its southern boundary is Sayon and Baikal mountains, and in the north continues upto the Arctic sea.
- 4) **Eastern Siberia:** Lies between the Lena River and the Pacific coast ranges. The main mountains of this region are the Verkhoyansk, Chersky, the Kolyma, Yablonoy and Stanovoy.
- 5) **The Far East Region:** Pacific coastal parts of Siberia, the Kamachatka Peninsula, the Kurile Islands, the basin of lower Amur River and Sakhalin islands form the region. It is primarily a mountainous region. Two rivers flow – Amur and its tributary Ussari.
- 6) **Central Asian Region:** Covers sand deserts, known as Karakum, Kyzye Kum, Usturt Plateau, situated between Caspian and Ural seas on the southern border, there are some important mountains, e.g. Kopet Dag, the high Pamirs, the Tianshan, the Alatau and the Altai mountain lies in the east. Amu Dariya and Syr Dariya are two important rivers which after crossing sandy desert, drain into Aral Sea. Fargana Valley is the most important valley of this region.

Climate: It possesses a climate, which is described as typical continental. The climate is mainly cold and dry, its winters are long and summers short. Cold airmasses originating in the Arctic region and flow directly upto Central Asia.

Agriculture:

Wheat Rye and BarleyMaizeFlaxSugar beetPotatoCotton Steppes of the Ukraine, North CaucasusColder Central RegionsAround Black SeaBalticRegionWestern Region of RussiaWestern Region of RussiaCaucasus, Central

(N.C.E.R.T. TEXT BASED)

6 to 8 Class

ASIA

- Asia and Europe forms the part of same land mass occupying 1/3rd of the land area.
- The Asian land mass has latitudinal extent of 10°S - 80°N - mainland lies north of equator.
- The longitudinal extension 25°E - 170°W – half way round the globe.
- **Physical features:**
- A. Northern lowlands:** In between Ural mountain and Leena River called Siberian plain. Western half of this plain is a flat area made of sedimentary rocks, eastern part is an eroded plateau. Ob, Yenisi, Lena – these rivers develop marshy mouth. Lake Baikal – deepest lake. This is landlocked and desolate territory.
- B. The Mountains:** South of Northern lowlands, fold mountains and plateaus lie. Pamirs the merger point of ranges Hindukush (W), Tienshan (NE), Kunlun (E), Karakoram and Himalayas (SE) enclosing plateau.
 - West of Hindukush, Elbrus and Zegros mountain enclosing plateaus of Iran. Further west it diverges as Pontic and Taurus enclosing Anatolia plateau.
 - Karakoram and Himalayan ranges including Mount Everest, K2, some of the largest glaciers Biafo, Baltoro, Siachin, Hispeer, Batura are associated with it.
 - Kunlun – Himalaya enclosed Tibet plateau. Tarim basin located between Kunlun and Tien Shan.
 - The broken crescent of ancient fold mountain Atlas, Yoblonov, Stananov ranges to east of Tien Shan enclosing huge desert basin, Takla Makan, Dzungarian basin and cold Gobi desert.
- C. The Southern Plateau :** The plateau of Arabia, Yunnan plateau, Shan, Deccan made up of very old rocks.
- D. The Great River valleys:** Most fertile river

valleys of the world, Tigris-Euphrates, Indus, Ganga-Brahmaputra, Irawady, Mekong, Sikiang, Chang Jiang and Hwang Ho. Incorporates most thickly populated areas of world.

E. The Island groups : East Indies –The SE extension of Asian landmass incorporates three major island groups Indonesia, Philippines and Japan. Characterized with fertile soil of lava ash on the coastal track.

- Climatic conditions are influenced by the latitudinal location of mountain barrier in east-west direction.
- Monsoonal impact is most prominent in southern and South East Asia.
- Other climate type includes Polar (N), mid latitudinal arid, tropical arid, cool east margin, cold east margin, etc.

· **People**

59% of world population, 80% in rural areas (Japan with 75% urban)

Tribes : Mongoloids, Caucasoids, Negroids

Average density 110 per/sq. km.

Less density – north and east part of Siberia 10 persons/sq. km.

Medium density – west and south east Asia 10-50 per/sq. km.

High density- south and east Asia and South East Asia – 50-100 per/sq. km.

· **Resources**

Soil – 1/6th suitable for agriculture. Alluvial, laterite, black, desert, montane, podsollic.

Agriculture type – shifting agriculture, intensive agriculture, extensive agriculture.

Major crops – Rice, wheat, millets, pulses, oilseeds, sugarcane, tea, cotton, jute, rubber.

Mineral – Iron ore – Russia, China, Azerbaijan, India; Mica and Bauxite – India; Tin – Malaysia; Coal – Russia, China, India; Mineral oil – South west Asia.

PAKISTAN

- 24°N - 37° N and 61° E - 75° E
- Baluchistan plateau, potwar plateau, Kirthar, Suliaman, Hindukush – **important mountain**

ranges with passes – Khyber (Hindukush), Bolar (Kirthar).

- Indus basin stretches from Potwar plateau in north to Arabian sea in south. Drained by rivers Chenab, Ravi, Sutlej – fertile basin.
- Hot arid climate with 50 cm
- Vegetation varied low mountains – broad evergreen oak chestnut
- High mountain – cone shaped deodar, pine
- Lowlands – short grasses and shrubs.
- Sandy alluvial soil facilitates agriculture – wheat, cotton, sugarcane, rice bajra, oil seeds, milch cattle rearing and fruits (Chaman, Quetta, Kalat).
- Mineral** Coal, Iron ore, gold (Baluchistan), mineral oil (Potwar and Ghodak), Natural gas (Meyal).
- Textile paper, sugar, cement, fertilizer, leather crop industries.
- 186 per/sq km density. Urdu main language. Islam religion. Other languages – Punjabi, Sindhi, Pashtu, Baluchi.

NEPAL

- 26° N - 30° N and 80°E - 88° E.
- Mountainous country with Himalayan ranges Greater Himalayas and Mahabharata.
- South of it, Terai low lying plain. Marshy and forest covered.
- Central part valleys as Kathmandu and Pokhra.
- Montane climate persists in entire country.
- Terai – deciduous; West margin – grassland; Northern slopes – temperate forests.
- Soil poorly developed, only 30% suitable for agriculture.
- Mica, lignite, copper, cobalt, iron are important minerals.
- 131 per/sq km population most dense Terai.
- Agriculture subsistence type – rice, wheat, millet, barley (food crops), sugar cane, oil seeds, tobacco, potato, jute.
- Least industrialised, tourism most important industry.

- One of the greatest hydropower generation – only 0.28% is used.

BHUTAN

- Land locked area.**
- 26°45'N - 28° 20'N and 88°50'E - 92°05'E.
- Entire mountainous (elevation ranging from 150 mts. to 7000 mts.)
- Southern plains.
- Important rivers,** - Wangchin, Togsa, Manas
- South has hot humid climate whereas north has true alpine climate.
- Water and forest best natural resources
- Chukhua hydroelectric project is most important.**
- 57% area under forest.
- Forest based Indus has been established at Gedu.
- 16% of the total area under agriculture and settlement.
- Rice, wheat, maize, potatoes.
- 90% population descent on subsistence agriculture.**
- Population density 13 per /sq. km.
- One of the least developed regions of world.

MYANMAR

- 10°N - 28° N and 92°E - 101°E with long coastline with Bay of Bengal and Andaman Sea.
- Surrounded by young fold mountains of the west and the north are continuation of Eastern Himalayas, Patkai, Naga, Chin and Arakan Yoma.
- Eastern part is upland and low hills as Shan. Kayinni plateaus to southern port.
- Central Myanmar has lowlands running north south, great alluvial lowlands formed by rivers Irrawaddy, Chindwin, Sittang, Salween.
- Tropical monsoonal climate persists in the country except mountains where coal montane type of climate has been identified.
- Tidal forest – coastal – sundari; Monsoonal deciduous – interiors – sal teak; Temperate deciduous – mountains – oak, ash.

- **Mineral resources** – silver, lead zinc (east ern plateau); Precious stones – sapphire, emeralds (shan plateau); Pearls – Gulf of Martaban; Coal – Kalema Chindwinn – Myitaha confluence.
- Livestock rearing and fishing is the largest sector (60% of economy).
- Rice, Maize, pulses, groundnuts, sesame seeds, sugarcane, jute, cotton, tobacco.
- Industrial development is restricted due to shortage of power and other infrastructure.
- Main industries include textiles.
- Yangon, Moulmeen, Tavoy, Mandalay, Akyat are important cities and ports (except Mandalay).

BANGLADESH

- Formerly East Pakistan, extends from 20°30'N to 26° 45'N and 88°E - 92°40'E.
- All Bangladesh lies in Ganga-Brahmaputra delta and entire land of fertile soil and is flood prone.
- South eastern part of Bangladesh is hilly Chittagong hills.
- **Jamuna, Padma, Meghna, Surma, Karnaphuti are the major streams.**
- Tropical monsoon climate with 250-500 cm of rainfall.
- Coastal areas are affected by tropical cyclone predominantly during August-September.
- **Monsoon forest** – teak, sal; Deltaic – sundari.
- **Mineral resources** – lignite, limestone, China clay and glass sand.
- Natural gas is in Comilla and Sylhet district.
- Alluvial soil – agriculture the most important economic activity.
- Rice, jute, wheat, sugarcane, tobacco, pulses, oilseeds, tea, potatoes.
- Small manufacturing sector – some large scale, small scale and cottage industries.
- Jute cotton textile, tea, paper, cements and light engineering.

- **River transport is most important means of transport.**
- Dhaka, Chandpur, Barisal, Khulna are inland ports.
- Chittagong and Monga the seaports.
- Population of 755-persons/per sq km. with majority following Islam.

SRI LANKA

- Island country extending between 6°- 10° N and 80°E - 82°E.
- **Entire island is made up of hard rocks.**
- East coast and river valleys are alluvial deposits.
- South central part is highest, rising to more than 1500 m, which falls to rolling coastal plains.
- **Mahaveli ganga is the longest river.**
- Hot humid climate is most pronounced for Sri Lanka – winter and summer monsoon.
- Mixed evergreen forests – thorny scrubs, dry savannah.
- **Agriculture most important activity – carried in some coastal parts.**
- Rice main food crop – with tea, rubber, coco nut also cocoa and spices.
- **Fishing is important activity.**
- Graphite and gemstones are most valuable Sri Lankan mineral with some iron ore.
- Agro based industries are most important beverages, coir products, leathers etc.
- Road most important means of transport followed by ferry boats.
- Trincomalee, Colombo are important ports.
- Kandy, Jaffna, Anuradhapura are major towns.
- Sri Lankan exports include tea, rubber, coco nut, gemstones, and textiles.
- Population of Sri Lanka – 285-persons/sq. km. density.
- Sinhalese, Buddhists, Tamils, Hindus important groups.
- Minor Christians and Muslims.
- Singhalese, Tamil and English are spoken.

INDONESIA

- Lies between southeastern tip of the Asian mainland and Australia.
- Consist of more than 13,00 islands of various sizes. Of these only about 6,00 are inhabited.
- **Main islands are Borneo (in Indonesian known as Kalimantan), Sumatra, Irian Jaya, Celebes (Sulawesi), Java, Madura and Bali. Northern Borneo is a part of Malaysia.**
- This island country spreads along the Equator over a distance of about 5,000 km in an east-west direction. Its north-south extension is about 2,000 km. Total land area is about 19 lakh sq. km.
- Indonesian island generally have mountainous relief. The coastal plains are generally narrow, except for eastern Sumatra, southern part of Kalimantan (Borneo) and Irian Jaya.
- **The Indonesian archipelago bears the marks of widespread volcanic activities.** Most of the mountain peaks are volcanic cones, many exceeding an altitude of 3000 metres.
- Earthquakes and associated tidal waves called 'tsunamis' are quite common.
- Climate is of equatorial type with consistently high temperature (except high altitudes) and heavy rainfall in all seasons.
- In many parts of western Indonesia, there are distinct peak periods of exceptionally heavy rain caused by monsoon.
- The eastern parts, which are near to Australia experience a clearly marked dry season during June-September.
- Dense forest in their natural state is found in most parts of Indonesia.
- Significant variations in vegetation types from coastal regions to lowlands, to higher altitudes. The forests are less dense towards the east.
- Some parts of Indonesia such as eastern two-thirds of Java, Bali and a small part of interior and coastal northeastern Sumatra have fertile soil.

- Agriculture is the most important economic activity. Little less than 50% of the working population is engaged in agriculture.
- Major crops grown in Indonesia, divided into two groups are food crops and cash crops.
- **Rice is the most important food crop** followed by maize, cassava, sweet potatoes and soyabeans cultivated on small land holdings.
- Indonesia is an important producer of a wide range of cash crops such as rubber, oil palms, copra, coffee, tea, cocoa, sugarcane and tobacco mainly grown in large plantations in a scientific manner.
- Considerable efforts were made during late 1980s to accelerate the growth of animal husbandry. Recently begun developing marine and fresh water fisheries.
- Two thirds of its land area covered with forests, mainly tropical hardwoods.
- Important minerals are petroleum, natural gas, coal, tin, bauxite, copper, nickel, silver and gold.
- Manufacturing sector has grown rapidly producing a wide variety of goods ranging from handicrafts to high technology aerospace products.
- Cement, iron and steel, automobiles, consumer goods such as processed food and beverages, electrical appliances and petrochemicals are major industries here.
- Most cities of these islands are connected with highways. Railway are limited to Java, Madura and Sumatra.
- **River transport is very important in several areas especially Kalimantan and eastern Sumatra.**
- Jakarta is the capital city. Surabaya and Bandung are other major cities.
- Ranks fourth among the most populous countries in the world after China, India and the USA.
- Distribution of population is highly uneven with density of population very high in Java, Madura and Bali, which contain one-thirteenth

of the total land area of Indonesia and, two-thirds of its population.

- Nearly 90% of the population are Muslims.
- Christianity, Hinduism, Buddhism and Confucianism are some other religions being followed by people in different parts.
- Bahasa Indonesia is the official language, which has many Sanskrit and Arabic words.

MALAYSIA

- Located north of the Equator between 1°N and 7°N latitudes.
- **Consists of two widely separated areas** – the Malay Peninsula, which is part of Asian mainland, and the northern part of Borneo is land.
- **Peninsular Malaysia is divided into 11 states.**
- Northern Borneo has two states namely, Sarawak and Sabah.
- Forming the southern tip of the Asian mainland, the Peninsular Malaysia is located on one of the oldest and busiest ocean routes of the world.
- Peninsular Malaysia is separated from Sumatra island by the Strait of Malacca and from Sarawak and Sabah by the South China Sea.
- Central part of Malay Peninsula is mountainous and is surrounded by narrow coastal plains.
- The height of these mountain ranges varies between 1200 and 2100 m.
- Eastern Malaysia consisting of Sarawak and Sabah displays mountainous characteristics. The highest peak of this area is Kinabalu (height 4,101 m). The western part of Sarawak is broad coastal plain.
- Malaysia has an equatorial type of climate having uniformly high temperature and rain throughout the year. Average daily temperature varies between 21° C and 32° C.
- Natural vegetation consists of evergreen forest, which occupies large areas. The forest

cover in Sarawak and Sabah is denser and more continuous than that of the Peninsular Malaysia.

- **Rich in several mineral deposits** such as tin, copper, uranium, bauxite, coal, mineral oil and natural gas.
- Tin, copper and uranium deposits are found in the central highlands of Malay Peninsula.
- Sabah has copper mines, while bauxite and coal are exploited in Sarawak.
- **The most important wealth of Malaysia is petroleum and natural gas deposits.**
- Important cash crops of Malaysia are rubber, oil palm, coconut and cocoa.
- Rice is the main food crop.
- A section of Malaysian people is engaged in marine fisheries, while some are engaged in livestock rearing.
- Sarawak and Sabah are known for their vast wealth of tropical timber.
- The manufacturing sector has expanded and grown very fast.
- The highest growth has been recorded in electronics and electrical products, transport equipment, rubber products, chemicals, food products and steel products.
- Road and rail transport are better developed in Peninsular Malaysia than in Sabah and Sarawak.
- Major seaport of Peninsular Malaysia is Pinang (Georgetown). Kuching and Miri are the main ports in Sarawak.
- 80% of the people live in the Peninsular part, 10% in Sabah and 9% in Sarawak. Malays, Chinese and Indians are the main ethnic groups.
- 55% population is urban. Kuala Lumpur is the capital and largest city of Malaysia.

CHINA

- Spreading over an area of about 9.6 million sq. km. China is the third largest country in the world.
- It extends about 34° in latitude and 60° in

longitude. It shares political boundaries with as many as 14 countries.

- A country with complex physiographic features.
- The most predominant features are high mountains and plateaus, which share about one-fifth of the land. The plains account for about 15% of the land.
- China's relief may be compared with three semi-circular steps going down from west to east.
- The first step, i.e. the western part is mountainous and rugged.
- It has high mountain ranges with snow covered peaks and glaciers such as the Kailash and Kunlun ranges.
- **The plateau of Tibet, (Xi Ziang) is located between the Kailash and Kunlun ranges.**
- It is the **world's largest plateau** with an average height of 4000 m.
- Inner Mongolian, Loess and Yunnan-Guizhou plateaus and the Tarim and Sichuan basins form the second step with an average height between 1000 and 2000 m.
- The cold and dreary desert of Taklamakan is located in the Tarim basin.
- The eastern part of China stretching from the edge of the Greater Hinggan, Taikang and Wu-Shan mountain ranges to the coast forms the third step.
- Includes the river valleys of Huang He, Chang Jiang and Xi Jiang interspersed with hills.
- Several rivers originate from the western region of Tibet.
- While the Indus and the Satluj flow westward, the Tsangpo flows eastward. All of them enter India at different places and make deep gorges while crossing the Himalayas.
- The Salween and the Mekong originate from the eastern part of the plateau of Tibet.
- The Xi Jiang, the Chang Jiang and the Huang He flow eastward through China and drain into the Pacific Ocean.
- The valley of Chang Jiang is the largest

providing navigation and irrigation.

- The Huang He drains the Northern China and carried large volume of yellow silt.
- Climatically there is great variation between north and south and between inland and coastal areas of China because of variations in temperature and rainfall.
- Temperature decreases from south to north.
- Rainfall is caused mainly by the southeast monsoons during summer.
- Further north, in the Chang Jiang basin, summers are warm and rainy, winters are cool and the annual rainfall is moderate.
- In northern part, summers are warm, winters are very cold and annual rainfall is scanty.
- Large part of China is mountainous and arid, hence, cultivable land is very scarce.
- Even this land is declining in area every year to meet the growing demand for houses, roads and factories as a result of ever increasing population.
- China already has one of the smallest areas of cultivated land per person (about 1/15 hect are) in the world.
- Chinese farmers have been successful in increasing the per unit yield of crops substantially.
- China is essentially an agricultural country. Intensive agriculture and horticulture have been practised for over 4000 years.
- Among crops, cereals are the most important. Rice is the main crop grown in southern and central China.
- Wheat, soyabean and millets are the main crops of northern China.
- China is a major producer of rice, wheat, maize and millets.
- Silk, cotton, tobacco and tea are important cash crops.
- Pigs, chickens and ducks are widely reared in China as domestic animals and birds.
- Horses, camels, sheep and goats are raised in arid grasslands.
- Cattle are few and dairying in not of much

significance.

- Fishing is important both on the coast and in the flooded rice fields.
- Rich in several minerals like coal, iron ore, tin and tungsten.
- Most provinces of north China have coal-fields, largest being Hebei, Shanxi, Shandong and Sichuan.
- Iron ore deposits are abundant in the anthracite fields of Hebei, Shanxi and Shandong.
- On-shore oil-fields at Shengli, Dagang and Karamay.
- Natural gas is available in Canton and Sichuan provinces.
- Rich deposits of coal and iron have helped develop the iron and steel industry.
- Industrial development in China began with the manufacturing of cotton textiles followed by silk and steel.
- Chemicals, cement, machineries, agricultural implements, transport vehicles and paper are other important industries.
- Nearly three-fourths of the energy is produced from coal.
- Oil and natural gas together contribute little over 20%.
- Hydroelectricity shares about 5%.
- Compared to the area and size of population, means of transport in China are rather inadequate.
- Rivers are used as natural means of transport.
- Shanghai is the largest city of China. It is also the largest port and a big textile centre.
- Beijing is the capital and ranks second in population size. Other important cities are Tianjin, Shenyang, Wuhan and Guangzhou (Canton).
- China is the world's most populous country. It has almost one-fifth of the world's population. The average density of population is 142 persons per sq. km. However, the actual distribution is very uneven.
- Small families are encouraged by increasing rights to education and work opportunities for

women and by using economic rewards and penalties.

JAPAN

- Japan is located in the Pacific Ocean to the east of the Asian mainland.
- **It is a country of about 3,900 islands.**
- Of these, only four are large and important.
- **The Japanese archipelago** (elongated chain of islands) forms an arc. It extends over nearly 3800 km from north to south.
- It covers an area of 378 thousand sq km, which is less than 0.3% of the total land area of the world.
- Mountains form the backbone of the Japanese archipelago. They account for 72 per cent of the Japan's total land area. Most of its mountains are of volcanic origin. Mount Fujiyama near Tokyo is the most famous of them.
- It has not erupted since 1707.
- A number of volcanoes in Japan were active in the recent past. They provide one of its most pleasant amenities – mineral hot springs.
- In Japan, they are used for recreational purposes. Numerous hot-spring resorts are fed by these springs. The volcanic activity indicates the relatively young age of the Japanese islands.
- There are only a few lowland areas. The Kanto plain on the eastern coast of Honshu is quite important.
- Japan has a long but rocky coastline. It has many small but excellent harbours. They are used for shipping and fishing.
- Japan lies mainly in the temperate zone. Its climate is generally mild. But it varies considerably from place to place.
- Winds blowing from the Siberian region dominate the winter weather. It causes heavy snow and rain in the northern and western parts of the country.
- In summer, the oceanic winds from the south-east bring rain to the eastern and southern parts

of Japan. During September, violent tropical rain-storms originating in the Philippines Sea or in the neighbourhood of Caroline islands called typhoons strike the southern coast of Japan frequently. They often cause great loss to life and property.

- Rainfall is abundant ranging between 100 to 250 cm a year. Japan also enjoys many hours of sunshine throughout the year.
- The combination of plentiful rainfall and a temperate climate produces rich forests and luxurious vegetation that cover the entire countryside.
- The cold ocean current from the north and the warm ocean current from the south meet on the eastern coasts of Japan. It causes thick fog and creates ideal condition for fish to thrive.
- Japan is a small island country with a large population of nearly 126 million in 1998 and average density of 337 persons per sq. km.
- Except forests and marine resources, it is poorly endowed with other natural resources.
- Owing to country's mountainous topography, arable land is extremely limited.
- Terraced farming is widely practised on mountain slopes.
- Japanese farms are small in size. But they are intensively cultivated.
- Mechanised farm implements such as power tillers, tractors, rice planters and spraying machines are used for farming operation.
- **Rice is the main crop.** Though area under rice cultivation has reduced considerably, it still occupies about half of the total cultivated land.
- Wheat, barley and soyabeans are other important crops.
- Japan has diversified its agricultural production in the past several years. Animal husbandry and cultivation of fruits and vegetables have been accelerated.
- Japan lacks good pastureland; attention is being paid to livestock rearing. It now occupies

the second place in total agricultural production.

- Cultivation of fruits and vegetables has increased substantially in the past few years.
- Wide varieties of fruits and vegetables, such as mandarin, oranges, lettuce and strawberries are grown in Japan.
- **Nearly two-thirds of the total area of Japan is forested.** The most popular species of trees are sugi or Japanese cedar, hinoki or Japanese Cypress and akamatsu or Japanese red pine.
- These forests provide building materials such as timber and pulp for paper production.
- The seas surrounding Japan, especially in the east abound in all forms of marine life.
- Japan has been one of the major fishing nations in the world.
- It contributes nearly 15% of the total fishing haul of the world. However, Japan is acutely conscious of the need for marine conservation.
- Japan lacks most of the minerals necessary to sustain modern industrial structure. Japan's main mineral resource is coal, which is of low grade. Hence, basic minerals such as mineral oil, iron ore, coking coal, and non-ferrous metal ores such as copper, nickel and bauxite have to be imported.
- **Japan depends on overseas sources to meet roughly 85% of its energy requirements. Mineral oil, coal, natural gas, nuclear power and hydro-electricity are the principal power resources.**
- Despite paucity of minerals, Japan is a highly industrialised country. Production of iron and steel has expanded remarkably since World War II.
- It has diversified and set high technical standards in the international market.
- This includes electrical machinery and electronics (e.g. generators, televisions, music systems and calculators), ship building, automobiles and precision machinery such as optical goods industry including cameras, binoculars,

microscopes, timepieces and watches.

- Chemicals including petro-chemicals are an other important industry of Japan.
- Japan is a major trading nation of the world. It imports raw materials such as iron ore, bauxite, nickel, copper-ore, crude oil, coal, natural gas, raw wool and cotton as well as foodstuffs.
- **Japan's major exports are automobiles, steel, ships, various kinds of machines and electronic goods. Japan's biggest trading partner is the USA.**
- Japan has developed its transportation facilities immensely. It has introduced faster, safer and more economical means of transportation.
- It ranks seventh in the world in terms of population. The average density of population is 337 persons per sq. km. It is one of the most densely populated nations of the world.
- Japan is also one of the most urbanised nations of the world. About three-fourths of its population lives in urban areas.
- About 60% of the total urban population is concentrated in the major metropolitan areas of Tokyo (the capital city), Yokohama, Osaka, Nagoya and Kitakusho.
- Mass production of instant food items, frozen food and various kinds of daily necessities brought changes in family or social life.

EUROPE

- Sixth ranking continent of the world surrounded by Arctic, Atlantic oceans and Mediterranean Sea.
- **Asia is separated from Europe by Ural mountain, Caucasus and Caspian Sea.**
- **Europe is identified as continent of peninsulars and islands**

Physical features

(a) North western highlands

- Extends from Finland, Sweden, Norway, British Isles to Iceland.
- Includes Fenno Scandian shield – one of the oldest exposed rocks of Europe – buckled with

Kgollen mountains.

- Sperrin, Cambrian, Pyrenees, Gramphian are other ranges in British Isles.
- Norwegian coasts marks the example of Fiords coast.

(b) North European Plain

- From Urals to Atlantic coasts
- Broadest to east and narrows down to west.
- Low flat and gently rolling plains
- This plain is drained by large navigable rivers.
- Plain is underlaid with deposits of high grade fossil-fuels such as coal, oil and natural gas.
- These deposits extend into the North Sea where oil exploration and production on a large scale takes place.

(c) The Central Uplands

- A variety of mountains, hills and plateaus make up the Central Uplands.
- The Meseta in Spain and Portugal, the Massif Central and Jura mountains in France, the Black Forest in Germany and several low ranges in the Czech and Slovak republics are part of this region.
- Two major rivers, which flow through this region, have broad valleys. While the Rhine flows northwards, the Rhone flows southwards.

(d) The Alpine System

- In the south, there is a chain of high mountains.
- This chain stretches from the Atlantic Ocean in the west to the Caspian Sea in the east from where it further extends into Asia.
- These mountains have high peaks, steep slopes and deep valleys.
- The most important mountain system among them is the Alps. Mount Blanc (4,807 m) is the highest peak of the Alps.
- The other important mountain ranges are the Pyrenees, the Carpathian and the Caucasus.
- These mountain systems generally have a series of ranges than run parallel to one another forming folds.

Climate and vegetation:

- Europe's climate is described as mild.
- Europe lies in the region of the Westerlies.
- The warm waters of the North Atlantic Drift keep the seas along Western Europe ice-free.
- The moderating influence of the Westerlies and nearness to the seas and oceans keep summers warm and winters cool in Western Europe. The temperature remains equable and rainfall is well distributed throughout the year. In winter, fogs are common. This type of climate is typically maritime and is known as the West European type.
- The moderating influence of the ocean is reduced eastward. As a result, in central and eastern Europe, summers are hot and winters are very cold and rainfall is also less. Such climate with wide variation in the annual range of temperature and moderate rainfall is called continental climate.
- Southern Europe comes under the influence of offshore winds during summer. Summers are long, hot and dry. Winters are warm and wet. This type of climate is called the Mediterranean type.
- The area north of the Arctic Circle has an extremely cold climate. Precipitation is very scanty and mostly in the form of snow. Summers are short with long and warm days. The land is covered with snow for the major part of the year. It is called Tundra climate.
- In the Mediterranean region, trees are required to stand a long summer drought. Hence they are small in size but have deep roots. Their leaves are small, thick and glossy. Some trees have thick and pulpy bark. Olive, fig, grapes and oranges are the most common fruits of this region.
- South of the Tundra lies the Taiga region which is of coniferous forests. Trees are tall and straight with a cone-like shape.
- South of this belt lies the belt of mixed forest. It has some coniferous trees and mostly broad-leaved deciduous trees which shed their leaves

in winter. Oak, ash and poplar are the common trees of this region.

- In the southeast part of Europe, there is an extensive grassland called the steppes where the grasses are shorter. This region extends from the Danube valley in Romania to Ukraine where grasses are taller.

Natural resources:

- The Scandinavian countries have utilized their marine resources, water power and forest wealth in the best possible way.
- The Netherlands has reclaimed vast tracts of land from beneath the sea for agriculture.
- In countries like Great Britain, Germany, Belgium and Russia, the available mineral resources have been used to make them giant industrial nations of the modern age.
- In many parts of Europe, cultivation of crops and rearing of animals are done on the same farm. This type of farming is called Mixed Farming. It yields high returns to the farmers.

Soil resource:

- Europe has a large proportion of level and well-watered lowland, which has been brought under cultivation.
- The Netherlands has reclaimed land from the sea by making big embankments along the sea front. They are called Dykes. The water from the enclosed land called Polders is pumped out into the sea.
- Hills and less fertile lands are put under pasture. Scientific methods are followed in the rearing of cattle.
- A variety of crops are grown here depending upon the soil and climate.
- Wheat is the most important crop of Europe. It is grown in the area of fertile soil with cool but relatively long summers with abundant sunshine. Some of the important wheat production areas are Ukraine, the Paris basin, the Low Countries, the North European plain, the plains of Hungary and the Po valley in Italy.
- Poorer soils are used to grow barley, rye and oats in that order. They supplement wheat,

which is the staple food crop of Europe.

- Sugar-beet and potatoes are two very important root crops of Europe. Sugar-beet is the main source of sugar here.
- Flax is the only fibre crop of Europe, which is used for making linen. It is grown in cool damp lands especially in Belgium and the Baltic States.
- A large variety of fruits such as apples, olives, figs, grapes, peaches and oranges are grown in large quantities. Bulgaria in the eastern part, and the Netherlands and Belgium in the western part of Europe, are known for vegetables.
- Machines are used on a large scale for different activities in the farms such as ploughing, sowing, harvesting, cleaning, packing etc.
- The roses of Bulgaria and the tulips of the Netherlands are well known. These products are exported to neighbouring countries.

Rearing animals:

- About one-fifth of the land in Europe is under pasture. Carefully bred cattle ensure a high yield of milk, which is used for preparing a number of milk products such as butter, cheese, dried and condensed milk, etc.
- The countries around the North Sea are famous for their dairy industry. Denmark is especially noted for it. Cattle are also reared for meat.
- Pigs are reared for pork and bacon.
- Poultry farming is very common in Europe. It provides eggs and chicken.
- Sheep rearing is done in drier parts mainly for wool and mutton.

Forests:

- A large part of the forest cover in Europe is confined to Scandinavian and the Alpine mountains and the taiga region of Russia.
- Logging and lumbering are important activities of the forest areas. Timber and wood-pulp are important forest products. Newsprint, paper, rayon and other synthetic fibres are produced from wood.

Mineral resource:

- Coal, Iron-ore, petroleum and natural gas are important mineral resources of Europe.
- Coal is found in Great Britain and on the mainland of Europe in the region from north-eastern France to Poland. Besides this, it is also found in Spain, Ukraine and Russia. Coal is the major source of power.
- Petroleum or mineral oil is found in the regions of sedimentary rocks in a few areas. The important oil fields are in the North Sea, Romania, Georgia, Armenia, Azerbaijan and Russia.
- Iron ore is found in France, Ukraine, Azerbaijan, Sweden, the United Kingdom, Germany, Russia and Spain.
- Iron and steel industry is important in many countries of Europe. Its major centres are found in the United Kingdom, France, Germany, Ukraine and Russia. Countries like Italy, Belgium, Czech and Slovak Republics and Poland make steel by importing iron ore from other countries.
- The iron and steel produced in these countries are used by a number of other industries, such as industries manufacturing railway engines and wagons, machines, automobiles and ships.
- Coal is used in chemical industries, which have developed in several parts of Europe.
- Aluminium is extracted from bauxite. It is used in making aeroplanes and electrical wires.
- Denmark is an example of the agro based category.
- Austria, Switzerland, Czech, Slovak, Belgium and the Netherlands belong to the metallic group.

Water resources:

- The oceans have been used for fishing and shipping on a large scale.
- Fishing is a very complex operation. It involves a large number of activities such as manufacturing nets and fishing boats, catching fish, processing and packing fish and finally, marketing these products.

- Dogger Bank and the Great Fisher Bank are important fishing grounds.
- The major fishing countries are Norway, Sweden, Iceland, Denmark, the Netherlands, France, Germany, the United Kingdom, Spain and Portugal.
- Rivers and canals provide a good system of inland waterways in Europe.
- Water has been used on a large scale to generate power. The main hydro-power producing countries in Europe are Spain, Italy, France, Switzerland, Norway and Sweden.
- The Netherlands presents an excellent example of managing its water resources. Its lower areas, especially the delta region, faced the problem of flooding. To reduce this danger, the five estuaries have been seated with dams, which regulate the flow of water.
- The Netherlands also had to struggle to get sufficient water for drinking and navigation.

Population:

- Europe is the most densely populated continent of the world.
- The plains of Europe have a fairly high density of population.
- The coal fields and industrial regions of the UK, France, Germany and Italy show high density of population.
- Eastern and southern Europe have moderate density, northern Europe is thinly populated.
- Europe has several large towns and cities many of which are historical places.

Transport and communication:

- Europe has a well-developed network of all means of transport and communication.
- Railway lines criss-cross Europe inspite of mountain barriers.
- London, Paris, Berlin and Moscow are major junctions.
- Roads are also very well developed. There are highways connecting different countries.
- Road journeys are very popular as they offer a good view of the natural beauty of the landscape.

- Rivers and canals provide easy and cheap means of transport for moving bulky and heavy cargo.
- The Rhine is the busiest inland waterway of Europe.
- The Seine, Thames, Danube and Volga are the other important waterways.
- In a medium-sized country like Romania, there are nine ports on the entirely navigable river Danube over a distance of only 1,075 km.
- Denmark comprises the Jutland peninsula and over 400 islands. A number of bridges and a network of ferry services connect major islands to maintain communication links.
- Airways connect all the important cities of Europe with one another. Several international airports like London, Paris, Frankfurt, Berlin, Geneva, Rome, Moscow and Amsterdam are connected with almost all the other continents.

UNITED KINGDOM

- Lying off the northwest coast of Europe, there is a group of islands called the British Isles.
- The two main islands are Great Britain consisting of England, Wales and Scotland and Ireland, divided into Northern Ireland and the Irish Republic. The Irish Republic is independent. Northern Ireland and Great Britain are under one crown. Together they are called the United Kingdom.
- The United Kingdom occupies the major portion of the British Isles. Seas on all sides surround it. It is separated from the mainland of Europe by the English Channel.

Relief and climate:

- The United Kingdom is a country of low relief marked by undulating plains, low hills and dissected plateaus. The highest peak is only 1,350 m above sea level.
- Areas of the sea penetrate deep into these islands. As a result, the country has a very long indented coastline.
- No part of the land is more than 125 km away from the sea.

- The seas surrounding the islands are shallow. The extensive continental shelf is an ideal breeding and feeding ground for fish.
- The oceans influence the climate. It is temperate and equable with very little difference between the summer and winter temperatures.
- The Westerlies make winters warm and summers cool. Rainfall is well distributed throughout the year. However, it is slightly more in winter than in summer.
- United Kingdom has less sunshine, averaging two hours a day.

Resources and economic development:

- The United Kingdom has a very small percentage of its area – less than 10 per cent under forests.
- Nearly half of its land is under meadows and pastures, especially in the western part.
- Some amounts of rain throughout the year and the mild temperature have favoured the growth of grass. Hence rearing of cattle and sheep is an important activity.
- Poultry farming is also very common.
- Less than one-third of the total area is under cultivation. The arable land is concentrated in the drier eastern and southeastern parts of England.
- Wheat, barley, oats, rye, potato, sugar beet, vegetables and fruits are the major crops.
- The country has developed its fishing industry tremendously.

Minerals:

- Availability of coal and iron-ore helped in developing its iron and steel industry. It led the world in the production of pig iron and crude steel for several decades.
- As a result of this early start, it has exhausted its good reserves of coal and iron ore today.
- The country, therefore, imports iron ore for its flourishing iron and steel industry. Some coal deposits have been found in the North Sea.
- The country still produces a large amount of hard coal, which is the main source of energy production in the country.

- Atomic energy was produced for the first time in this country for commercial purposes. It supplements the power resources of the country.
- Huge deposits of oil and natural gas are also found in the North Sea. Today, the UK is one of the leading oil producing nations of the world.

Industry:

- A wide variety of industries have developed in this country, e.g. iron and steel, engineering, electronic, chemicals, manufacturing of railway engines, wagons, automobiles, aeroplanes and ships, processed foods and beverages, fish and dairy products.

Transport:

- The country has a fine network of roads and railways. It is being linked to the mainland of Europe through undersea passage.
- The long, indented coastline of the country has promoted the development of seaports numbering more than 300. Among these, Liverpool, Glasgow, Newcastle and Southampton are notable.
- Other important industries cities in the plains are Birmingham, Sheffield and Manchester.
- London port also handles a large amount of cargo. It is one of the busiest international airports in the world.

FRANCE

- **France is the second largest country in Europe, next only to Russia.** It is surrounded by seas on three sides
- France has not only a long coastline but also access to the main trade route from the Atlantic Ocean and trade to the East through the Mediterranean.
- At the same time, it adjoins some of the most populous and prosperous countries of Europe – Belgium, Germany, Switzerland and Italy.
- The Pyrenees mountains run along the southern boundary and separate France from Spain.
- In the eastern part, the Alps, the Jura and the

Vosges separate it from Italy, Switzerland and Germany respectively.

Relief and climate:

- France has a varied relief. More than half of its land, i.e. in the west, the north-west and the north belongs to the great European plain.
- The central plateau or the massif forms a well-marked unit. It slopes gently towards the west and the northwest.
- The Alps lie in the southeast part of France. Mont Blanc (4,807 m above sea level), the highest peak of the Alps, is located in France.
- The Pyrenees are located on the southern border.
- The northwest coastline of France is indented. Its narrow coastal plains and river valleys, like those of the Seine, the Loire and the Rhone, are very fertile.

Climate:

- The climate of France, like its relief, is also varied.
- The western and northern parts of the country enjoy maritime climate.
- The north-eastern and eastern parts of France and the central plateau, on the other hand have continental climate.
- The climate is slightly modified in the sheltered valleys of the central plateau.
- Southern France has the typical Mediterranean climate with long, dry summers and mild rainy winters. It has much more sunshine than any part of the United Kingdom has and is, therefore, warmer.

Resources and Economic development:

- The indented coastline provides many natural harbors. They have been developed for fishing, shipping and trade.
- Though France is not richly endowed with mineral wealth, it has used the available resources in the best possible way.
- Coal is found in the northern part of the country, which, in fact, is an extension of the Belgian coalfield. The quality of coal is not very good as it has been powdered.

- Iron ore is the only mineral, which is found in large quantities. More than 90 per cent of its iron ore comes from the Lorraine field.
- The small reserves of coal have acted as a spur in the development of hydroelectric power in France. The rivers are fed by snow and rain water from the Alps. The Pyrenees and the plateau region provide abundant pollution free waterpower at a low cost.
- The availability of raw materials has been an important factor in the location of industries in France.
- The iron and steel industry has developed in the Lorraine field and the northern coalfield.
- The textile industry of France is very important. While the silk industry is concentrated in the Rhone valley, the cotton industry is centered in the northern coalfield and the Vosges.
- The woolen industry is located mostly in the north.
- France specializes in the manufacture of machines, automobiles, ships and aero planes.
- It also manufactures chemicals, fertilizers, electrical goods, perfumes and other luxury items.
- France has preserved nearly 1/4th of its area under forests.
- Another 1/4th of the total area lies in the form of meadows and pasture lands on the low hills and plateaus.
- The pasturelands, with good rainfall, are ideally suited for rearing animals both for milk and meat.
- France is, therefore, one of the leading producers of cheese, butter and milk in Europe. In the highlands, sheep are reared for wool.
- The coastal plains and the river valleys are most suited to agriculture. A little over 1/3rd of the total area is under cultivation. Wheat is the most important crop.
- Maize is grown in the warm and humid south east. Rye and oats are grown on the poorer soils of the northwest coast and the central plateau.

- Barley grows more in the cool north. Potatoes, sugar beet and flax are the other important crops. They are grown in northern France.
- Farming in France is generally of the mixed type. Farmers cultivate crops and also rear cattle, pigs and poultry on their farms.
- The animals are fed on the hay and fodder obtained from the farms.
- Farmers to obtain maximum yield practice intensive farming. They use every bit of land and apply heavy doses of manures and fertilizers. Scientific farm practices such as using good seeds and insecticide, etc, and rotation of crops are followed. As a result, the yield of crops is very high, making France almost self-sufficient in food grains.
- France is famous for its vineyards. Terraced and sheltered valley slopes are mostly devoted to the cultivation of grapes, especially in southern France. French wines are known for their quality throughout the world.
- Champagne is one of these, which is produced from the grapes grown in the district of Champagne, near Paris.
- A wide variety of fruits – olives, figs, peaches, plums, pears and oranges are grown in the Mediterranean region. Apples are grown in the northern part of the country.
- Apples and grains with hops, instead of grapes, are used to prepare wine.
- France has an integrated network of transport. Good highways, efficient railways, extensive waterways and modern airways, provide quick and easy access to all parts of the country.
- They facilitate movement of goods and services, and also link them with the outside world.
- French contribution to art, literature, science and technology has been immense.

GERMANY

Physical features:

- Germany may be divided into two physical units – the North German Plain and the Southern Highlands and Mountains.

a) The North German Plain:

- This plain is part of the great European plain. It gradually widens from the west to the east. A thick mantle of glacial clays and sands covers it. These deposits have been left behind the ice sheets, which extended over this area a long time ago.

b) The Southern Highlands and Mountains:

- The general slope of these highlands is northwards from the Alps. Low and worn down uplands are found in the central part.
- They are deeply eroded by rivers flowing through them. The region extends from the Black Forest – a low tableland in the west – to the Bohemian Forest in the east.
- To the west of this upland is the famous Rhine valley. It is a wide rift valley through which the river Rhine flows. In the far south of Germany, the Alps rise abruptly. The plateau regions are made up mostly of sedimentary rocks.
- The Rhine, the Weser, the Elbe, the Oder and the Danube are important rivers.

Climate:

- Lying between 47°N and 55°N latitudes, Germany has a temperate climate.
- While the coastal area enjoys a maritime climate with cool summers and mild winters, the oceanic influences decrease towards the east and the south.
- The range of temperature tends to increase and the climate is of the continental type in the southeast. Thus it has warm summers and cold winters. Winters become severe in the south due to the rise in altitude.

Land use and economic development:

- The higher lands and mountains have coniferous forests. As such, there are extensive forests in the southern part covering nearly one-

third of the total land there.

- Germany is rich in coal (especially lignite), iron, lead, copper and potash salt. The Ruhr is the biggest and the richest coal producing area of Europe. The other important coal fields are Saar and Saxony.
- The Ruhr is a small right-bank tributary of the Rhine. This region has a number of industries and hence is often called the heart of industrial Europe.
- Iron ore is found mainly in the areas east of Nuremberg in Bavaria, south-east of Hanover and south of the Ruhr.
- A large number of industries such as coke furnaces, iron and steel plants, chemical industries, cement, machinery, automobiles and textile factories have developed in the region.
- Industrial centers are now found in all parts of the country because of their advantages such as hydropower, raw materials and improved transport. Lignite is used for producing thermal electricity and is also used as a raw material for the chemical industry.
- The important products of the chemical industry are explosives, synthetic rubber, disinfectants, insecticides, perfumes, dye, paints and plastic.
- Textile industries have taken advantage of the fuel and transport facilities. The cotton and silk industries are of importance in the western part.
- Highly finished goods such as optical glass and cameras, specialized scientific instruments and chemicals are produced in the Saxony region.
- More than half of the total land is under crops cereals, orchards and vineyards.
- The coastal areas and parts of the northern plains have poorly drained soil. Draining out their water has reclaimed swamps.
- By using scientific methods of farming the production capacity of the land has been increased.
- Although intensive agriculture is still carried

on in lowlands and valleys, farming is now highly mechanized.

- Wheat, barley, sugar-beet, potatoes, rye and oats are the major crops.
- Germany is one of the largest producers of rye, potatoes and sugar-beet in the world.
- It has made animal husbandry, including dairying, an important agricultural activity. Partly because of this reason it is an important producer of milk, butter, cheese and poultry products.
- Most of the central and southern parts of Germany have been put to agricultural use having mixed farming.
- The northernmost vine growing region of Europe is found on the slopes of the Rhine valley. The fertile soil of the valley is known for the fruits and vegetables grown on it.

Transport:

- The country is well served by airways, a dense network of railways, inland waterways and roads. Besides rivers, there are a number of canals, which provide easy access to the inner parts, which has promoted trade opportunities.
- The Kiel Canal connects the North Sea and the Baltic Sea. This 99 km long canal saves a journey of about 700 km by sea round Denmark.
- It is of great importance, especially in the trade with Scandinavia. More than 400 ships pass through this canal everyday.
- In the southern part, river Danube serves the same purpose in carrying the traffic to the western and central parts of Europe.
- Berlin is the largest city of Germany. It is a river port.
- Hamburg and Bremen are important seaports along the North Sea.
- Some other industrial cities of the Ruhr region, Cologne, Mannheim and Frankfurt are the other important cities in the Rhine valley.
- Munich, located in the Bavarian uplands, is a centre for art and culture. It is also known for its breweries.

- Leipzig and Dresden are important ancient cities situated along the river Elbe.
- Dresden is known for its ceramics. Rostock is an important port along the Baltic Coast.

RUSSIA

- Russia is still the biggest country in the world. Over 76 per cent of the total area of the former USSR lies within it.
- The Ural Mountains, the Ural river and the Caspian Sea divide this country into European and Asiatic parts. A large part of Asiatic Russia is very cold.
- Russia extends from the far north to the Black Sea in the south and from the Pacific Coast in the east to Kaliningrad in the west. Kaliningrad is a part of Russia. However, Lithuania separates it from the rest of Russia.

Physical features:

The landforms of Russia can be divided into four major groups:

(a) The Plains of European Russia:

- These are among the most extensive plain in the world. In fact, they are part of the central European plains. They stretch from the Arctic Ocean in the north to the Black Sea and the Caspian Sea in the south.
- These fertile plains are drained by several rivers, which flow in different direction. Of these, the Volga is the most important which falls into the Caspian Sea.

(b) The West Siberian Plains:

- Situated between the Urals on the west and the river Yenisey on the east, the West Siberian Plains are lowlands sloping gently towards the Arctic Ocean in the north.
- Rivers Irtysh, Ob and Yenisey flow through these plains and fall into the Arctic Ocean. Large parts of these plains are marshy lands.

(c) Central Siberian Plateau:

- Lying between river Yenisey in the west and river Lena in the east, there is a plateau called the Central Siberian Plateau.
- It rises to a height of about 500 m. It is deeply

eroded by rivers and much of it is covered with forest.

(d) Mountains and Uplands:

- Besides the Urals, which divides the European and Asiatic parts of Russia, there is a mountain rim all along its southern and eastern borders.
- While the Urals are old mountains, the mountains of the south and the east are young fold mountains.
- They are high and rugged. This part including the Kamchatka peninsula is a region of earthquakes and volcanic activities.

Climate and Vegetation:

- On account of its great size and the great distance of a large area from the sea, there are many climatic regions in Russia.
- One outstanding characteristic of its climate is the long, cold winter due to its extension in the northern latitudes.
- Except for the European part of Russia, the rest of the country is little affected by the moderating influence of the oceans. The interior part of the country has the continental type of climate with a high annual range of temperature.
- Moreover, the northern lowlands are exposed to the cold polar winds coming from the north. During winter, the inland and coastal waters over large areas freeze. There are very few all-weather ports. During January, the temperature may be above freezing point only in the sheltered areas in the mountains.
- Snowfall is common all over the country. It may be as long as for nine months in Siberia. A large part of the country receives rain during the short summer season.
- The amount of precipitation decreases from west to east. It is scanty in north-eastern Siberia. The heaviest rainfall occurs in the Caucasus mountains, mostly in winters.
- There is great variety in the vegetation as well. The vegetation belts lie one after the other in

a more or less regular sequence from the north to the south.

- The northernmost belt has the tundra type of vegetation.
- It is followed by the taiga, the mixed deciduous, the steppes and the mountain vegetation.

Resources and their utilization:

- Russia is rich in different kinds of natural resources.
- The aim is to have a mixed economy where some of the areas will be under state control but some other will be given to private sectors.
- **Agriculture:**
- Although a very small percentage of the total land area is under cultivation, it is quite large compared to that in any other country in the world. The growing season is very short and hence only one crop may be grown in a year.
- Wheat, oats, rye, maize, sugar-beet and potato are grown here, mainly in the plains of the European part of Russia.
- Rye and oats are cultivated in the cold north where the soil is poor.
- Maize and potatoes are cultivated in the warmer, humid lands of the south-west and western parts of Russia respectively.
- The whole of Siberia is unsuitable for cultivation.

Animal rearing:

- Less than one-fifth of the total area is under pasture and meadows.
- Cattle, pigs, sheep and reindeer are reared in large numbers for their milk, meat, wool and fur.
- Dairy-farming is important in the central and northern parts of European Russia, especially around Moscow.

Forestry:

- Little over two-fifths of the land in Russia is under forests. Most of the forest cover is in Siberia and in the far east of Russia.
- The lumberman to fell trees in a short time uses electric saws.

- Large quantities of timber and softwood are produced here. It is a leading producer of sawn wood. Softwood is used for manufacturing pulp, paper and newsprint.

Mineral and power resources:

- Russia contains large deposits of several minerals and power resources.
- Iron ore is found in the Urals, the Kerch peninsula and Siberia.
- It has huge reserves of iron, manganese and bauxite.
- It is also rich in gold. The other important minerals are lead, tin, zinc, copper and platinum.
- Coal is the most important power resource of Russia. It is found in the Kuznetsk basin, Eastern Siberia, the Urals and the sub-Moscow basin.
- Petroleum and natural gas are the other power resources found in Russia. Important oil fields are located in the region between the Urals and the Volga, Azov-Black Sea area, Bashkiria and west Siberia.
- Russia has vast waterpower resources. It has many large dams producing hydroelectricity.

Industries:

- Heavy industries have the major share in the total industrial production. Iron and steel industry is the most important industry.
- Russia is one of the largest producers of iron and steel in the world. Iron and steel industries are located in the Urals and Siberia.
- Russia manufactures tractors, heavy machines, trucks, blast furnaces, arms and ammunition, chemicals, ships and aero planes.
- Textile, electrical and electronic goods, and food-processing industries are also important.
- The chief industrial regions are in and around Moscow and St. Petersburg (formerly called Leningrad), the southern Urals and west Siberia, and the far eastern area.

Transport:

- It is a country of great distances.
- Railways and rivers are the chief means of transport.
- There is a network of railways and canals in the European part of Russia.
- The Trans Siberian Railway is the longest rail way in the world.
- Moscow is the largest railway junction.
- St. Petersburg and Moscow are connected with the industrial centres of Siberia by the Trans-Siberian railway.
- Moscow is a port of five seas - the Caspian Sea, the Black Sea, the Baltic Sea, Lake Ladoga and the Arctic Ocean, through the White Sea.
- Canals interconnect most of the rivers. The flat relief of the country makes its rivers highly suitable for inland transport. In the forest areas, some of the rivers are frozen during winter. They are used as natural tracks for sledges.
- Murmansk is the only ice-free port along the Arctic Ocean route to Vladivostok. Some of the important ports on the Black Sea, the Baltic Sea and the Pacific Ocean are kept open by ice-breakers.
- Oil and gas pipelines transport these commodities from the mining areas to other parts of the country.
- Air transport in Russia is highly developed. Moscow and St. Petersburg are important national as well as international airports. Air transport is of great value in the remote areas of northern and eastern Siberia.
- Most of its population is concentrated towards the west of the Urals. Siberia, especially its eastern part, is sparsely populated. Moscow is the largest city. It is the capital of Russia.
- Other important cities are St. Petersburg, Nizhni Novgorod (Gorky) and Yekaterinburg (Sverdlovsk).

AFRICA

- The African continent is separated from Europe by the Mediterranean Sea and from Asia by the Red Sea.
- However, it almost touches Eurasia at three different points: (a) the Straits of Gibraltar in the northwest, (b) the Suez Canal in the north-east, and (c) the Straits of Bab-el-Mandeb in the east).

THE LAND:

- Almost all of Africa appears to be one huge plateau though it consists of several plateaus.
- The plateau is higher in the south and in the east. A few volcanic mountain peaks rise above the plateau in the eastern part near the equator as the highest peak of Africa is Mt. Kilimanjaro with a height of 5,895 m above sea level. It remains snow-covered through the year.
- The lowland areas are in the western and the northern parts and along the coast.
- One of the special physical features of Africa is its Great Rift Valley. A Rift Valley is a long and deep valley formed due to cracks or rifts in the land. It is bounded by wall like steep slopes on both sides. In Africa, there is a long chain of such rift valleys running from the south of the lake Malawi northward to the Red Sea and then through the Gulf of Suez and the Gulf of Aden to the Dead Sea. Hence it is known as Great Rift Valley.
- Many of these valleys are filled with water called lakes. Therefore, there are several large lakes in the highland region of Africa.
- Lake Victoria is the largest lake in Africa.
- It is also the source of river Nile, which is the longest river in the world. It rises in the rainy equatorial region and flows northward and finally reaches the Mediterranean Sea.
- Another important river is the Zaire in Central Africa. It is also known as Congo in the later part. It drains a large area and discharges a huge amount of water into the Atlantic Ocean. It carries the greatest volume

of water among all the rivers of Africa.

- The Niger in the western part and the Zambezi and the Orange in the southern part are the other important rivers of Africa.
- With the exception of the Nile and the Zaire, few African rivers can be used for shipping. This is because the rivers drop from the higher plateaus to the coastal lowlands making waterfalls like Victoria Falls on the Zambezi.
- About 1/3rd of Africa is a desert land. The Sahara is the largest desert in the world. It is located in the northern part of Africa. The Kalahari desert in southern Africa is another great desert.

CLIMATE AND VEGETATION:

- Africa extends between 37° 14' N to 34° 50' S latitudes. Thus the major part of it lies within the tropical zone.
- It is, in fact, the most tropical of all the continents.
- The highest temperature in the world has been recorded at Al Aiziziyah (Libya) as 58°C.
- Only on the high plateaus and mountains is it somewhat moderate. Even on the plateaus the day temperatures are high although the nights are cool. There are marked variations in the distribution of rainfall. It has caused wide variations in climate.
- The belt lying along the equator on both sides has a hot, wet climate throughout the year. It rains almost daily and there is only one season, namely, the hot-wet summer, which is known as the equatorial type of climate. Most of the region is covered with thick forests called tropical rain forests. It has a varied wild life.
- To the north and south of the rain forests, there are regions of warm summers and mild winters. In these belts, most of the rain occurs in summer. There is a distinct dry period. This climate is known as the Sudan type of climate. This climate is found in a very large part of the continent. Its vegetation is mostly grasses.
- The region covered with tall and coarse

grasses is known as Savannah.

- Beyond the Savannah, both in the northern and in the southern parts of Africa, there are extensive deserts known as Sahara in the north and Kalahari in the south. Temperature is very high. There is almost no rainfall. The climate is hot and extremely dry known as the desert type of climate. Vegetation is either wholly absent or includes only scrub and bushes.
- The northern and the southern coasts of Africa have mild and rainy winters and warm and dry summers. This is known as the Mediterranean type of climate.
- The climate is cooler in the highlands of southern and eastern Africa.

NATURAL RESOURCES AND THEIR UTILIZATION:

Soil:

- In Africa, only 10 per cent of the soil is suitable for crops. It includes the volcanic soils of east Africa, the alluvial soils of the Nile valley and certain soils of the savannah lands, which are very fertile.
- In other parts of the continent, climatic conditions and the nature of the landform have been unfavorable for the formation of good soil.

Water:

- There are many rivers, which carry plentiful rainwater throughout the year. A good deal of this water is used for irrigation. Many rivers reach the sea through a series of waterfalls because they flow from the higher plateau areas on to the lower coastal plains.
- The Kariba dam on the Zambezi is the largest producer of water-power in Africa. The Aswan dam on the Nile in Egypt is another very big dam.

Minerals:

- It leads the countries of the world in the production of diamond, gold and platinum.
- More than 95 per cent of the world's diamond production comes from Africa.
- Africa is responsible for more than half the world's gold production. South Africa is the

major producer of gold and platinum in Africa.

- Africa has large reserves of cobalt, manganese, chromium, copper, tin, bauxite and uranium.
- Cobalt and manganese, which are mixed with iron to make steel, are found in the southern half of Africa.
- South Africa leads the countries of the world in the production of Chromium, a metal that does not rust.
- Zaire and South Africa are the main producers of copper (which is used for making electric wires), bauxite (which yields aluminium) and uranium (which is used in producing atomic energy).
- Petroleum is found in many parts of Africa.

Forests:

- Rubber trees grow wild in forests, though they are native to South America.
- Three different types of palm trees are found in Africa. They are coconut palm, oil palm and date palm.
- Coconut palms are found in the tropical islands (such as Zanzibar and Pemba) and along the equatorial coasts such as Tanzania. They yield copra from which coconut oil is obtained.
- Oil palm, from which palm oil is obtained, is common in west Africa. Nigeria exports a good deal of this oil.
- Date palm grows in the oases in the drier regions.
- Dates constitute an important item of food for the local people. Egypt exports a large amount of dates.
- Cacao and kola are trees, which provide us beverages. Cocoa is obtained from the cacao trees. Like coffee, it is a very popular drink and is also used for making chocolate. Cacao grows well in the equatorial lowlands as in Ghana and Nigeria.
- Kola trees yield nuts, which is used in preparing cola drinks and chewing gum.

- Africa has a large variety of fruit trees. In the tropical region, banana, pineapple, papaya, jackfruit and mango are common.
- Citrus fruits such as lemon, orange and lime are also grown here.
- The Mediterranean regions grow olives, apples, peaches and grapes.
- East Africa produces cashew nuts.
- Zanzibar and Pemba islands are the biggest producers and exporters of cloves in the world.

Wildlife:

- The extensive equatorial forests and swamps as well as the huge grasslands are ideal homes for a variety of birds and animals.
- Elephants, wild buffaloes, snakes, pythons, monkeys, hippopotamuses and rhinoceros are some of the important animals found in the forests and swamps.
- Deer, stag, zebra and giraffe belong to the open woodlands and grasslands.
- Camels are found in the deserts. The ostrich, a large, fast running bird, is found in the Kalahari desert.
- In the higher savannah regions of eastern, northern and western Africa, cattle grazing is very important. Nomadic tribes, who move from one place to another with their herds, own large herds of cattle.

Crops:

- Most of the food crops of Africa are root crops such as yam and cassava. With the exception of maize, cereals are not very important. Wheat, rice and millets like sorghum are grown only in small quantities.
- Amongst the cash crops, palm oil, groundnut, cocoa, coffee, cotton and sisal are important.
- Cocoa and coffee from Africa constitute about 60 and 24 per cent of world trade respectively.
- Cotton has been grown in the Nile valley for several thousand years. About nine per cent of the world's trade in cotton comes from Africa.
- Sisal is a vegetable fibre that is used in making ropes and sacks. Africa is one of the

world's largest producers and exporters of sisal. In fact, Tanzania leads the countries of Africa in sisal production.

- The islands of Zanzibar and Pemba are famous for cloves and coconuts. They produce about nine-tenths of the world's cloves.

THE PEOPLE

- About 70 per cent of these people are the Blacks. The rest of them have come from other parts such as Europe and Asia.
- Several hundred languages are spoken here.
- The people of Africa follow Islam, Christianity and Animism. ANIMISM is the religion followed by many tribes. It is based upon love and respect of nature.

ZAIRE – LAND OF FORESTS

- Zaire was ruled by Belgium for a long time. But it became an independent country in 1960. It is about three fourths the size of India but it has a small population, which is just a little, more than that of Kerala state.
- The greater part of Zaire lies within the basin of river Zaire from which it has derived its name.
- The Zaire basin is a large saucer-shaped depression surrounded by plateaus.
- The Zaire is one of the largest rivers of the world.
- Zaire lies in the equatorial region and so it has high temperature and heavy rainfall throughout the year. The abundance of heat and moisture causes plants and trees to grow very rapidly.
- The land is, therefore, covered by tropical rain forests. These forests are evergreen because all trees do not shed their leaves at the same time.
- In these dense forest trees compete with each other for sunlight and becomes very tall. Many of them reach a height of 40 m or more.
- Trees of several species are found in a very small areas. Below the tall trees there are several small trees, beneath them is a mat-like

green cover of grasses, shrubs and climbers.

- Because of the trees and the undergrowth, it is very difficult to travel in these forests.
- River courses are the only means by which one can travel in these forests.
- On both sides of the rain forests, savannah grasslands are found.
- Zaire is rich in several natural resources such as forests, wildlife, soil, minerals and water power.
- Agriculture and mining are the two important economic activities of the people.
- Zaire is often called a gigantic zoo because of its large variety of wildlife.
- Snakes, pythons, monkeys, elephants and hipopotamuses are some of the examples of animals living in the forests and swamps of Zaire.
- Although Zaire is a lowland, only one-fifth of its total land is under cultivation. It is because of its vast forest cover.
- The principal food crops grown here are rice, maize, cassava and sorghum.
- Maize is grown in the savannah region.
- Cash crops such as rubber, coffee, cotton and oil palm are grown just for export.
- Cattle-rearing is done on the highlands especially in the savannahs.
- Methods of agriculture are more traditional. Mainly the families producing them use the food crops. Efforts are being made to improve agriculture by providing fertilizers and using new methods of farming.
- Zaire has vast reserves of copper, diamond, cobalt, tin, zinc, manganese and uranium.
- They are found mainly in the southern province of Shaba (Katanga). It is one of the largest producers of copper and industrial diamond in the world.
- Most of the minerals extracted within the country are exported.
- Most of the industries in Zaire process agricultural and mineral products for export.
- They are located mainly in Likazi (Jodotville) and Lubumbashi (Elizabethville).

- There is huge potential for waterpower. It has a number of dams and hydel power stations.
- It also supplies waterpower to its neighbouring countries – Congo and Burundi. However, there is a lot of scope for future development.
- The people of the country are mainly the Blacks. They, however, belong to different tribes.
- Nearly two-thirds of the population consists of the Bantu speaking Blacks.
- The density of population is low, i.e. about 14 persons per sq. km.
- Zaire is mainly rural. However, the number of people now living in urban areas is growing very fast.
- The European settlers developed many of these urban centres.
- They are similar in appearance to any city of a developed country.
- Kinshasa is the largest city and is the capital of Zaire.
- Lubumbashi (Elizabethville) and Kisangani are other important cities.
- Matadi is the chief port of the country, which is situated on the river Zaire.

NIGERIA – LAND OF PALM OIL

- Nigeria is one of the largest countries of Africa. In population it leads all the countries of Africa.
- It is one of the wealthiest and most progressive countries of the continent.
- Nigeria is a country of lowlands and plateaus. The coastal area in the south is a lowland covered with rain forests.
- The surface of the land is undulating, i.e. it rises and falls so that it looks like waves.
- In North, lies the plateau of Jos where woodlands gradually give place to grasslands.
- The extreme north of the country merges with the Sahara desert.
- The Niger is the most important river after which the country is named.

- It drains the greater part of Nigeria before it falls into the Gulf of Guinea.
- Rivers of the northeastern part of the country flow into Lake Chad, thus forming an inland drainage system, i.e. one where the rivers do not reach a sea or an ocean.
- Coastal Nigeria has an equatorial type of climate and has rainfall throughout the year. In the interior there is a marked dry season in summer.
- Hot and dust-laden winds often blow from the north east during this season known as the HARMATTAN.
- Nigeria is mainly an agricultural country. The major part of its land is under food crops, which are consumed locally.
- They include yam, cassava, millet, maize, sweet potatoes, rice and beans.
- The country is self-sufficient in food and is very important for certain agricultural exports.
- It is the world's largest exporter of palm kernels, palm oil and ground-nuts. It is the second largest producer of cocoa. It also produces cotton, rubber, tobacco and bananas.
- The oil palm tree grows very well in the equatorial climate. It reaches its full height of approximately 12 metres in about fifteen years.
- The fruits of the tree grow in clusters. Oil is extracted from the hard nut as well as from the pulp of the fruit by simple, crude methods or by machines.
- It is important in the northern grasslands. Cattle, goats and sheep are reared. The goat-skins are supplied to the leather industries of Nigeria.
- One-third of the country's total area is under forest. Timber and plywood are the important exports.
- Kainji dam has been constructed on the river Niger. There are four hydel power stations in Jos in the north.
- There are large reserves of tin and columbite in the central plateau. They are exported on a large scale.

- Nigeria also possesses iron, lead, zinc, manganese and limestone.
- It is the only coal producing country of western Africa.
- It is one of the largest mineral oil producing countries of Africa.
- Nigeria has several industries such as textiles, food processing, leather and tanning, oil mills, cigarettes, rubber factories and metal works.
- The transport and communication system of Nigeria is one of the best in Africa.
- The majority of the people are the Blacks. They, however, belong to different tribes.
- Nigeria has a population of 108 million. The density of population is about 100 persons per sq. km. The density of population is comparatively higher in the southwestern and southeastern parts than in the rest of the country.
- Lagos is the capital city of Nigeria. Lagos and Port Harcourt are the principal ports.
- Ibadan is the largest city and an important trade centre.
- Important industrial centres are Kano, Kaduna and Jos in the north and Lagos and Port Harcourt in the south.

THE ARAB REPUBLIC OF EGYPT – THE GIFT OF THE NILE

- The Arab Republic of Egypt is situated in Africa but it is at the junction of two continents, namely, Africa and Asia.
- The Suez Canal serves as a very useful and convenient gateway of international trade between the countries of the east and the west.
- Egypt is a part of the Great Sahara Desert, which occupies nearly half the northern part of Africa. A very small part of Egypt lies in Asia also.
- The life-giving waters of the Nile have made it one of the richest and most thickly populated lands of Africa.
- The larger part of the country is a desert because of scanty rainfall. This part is almost wholly uninhabited.
- There is a narrow strip of land along the river Nile, which is fertile. The river has deposited rich mud on both sides during floods.
- In fact, not more than one thirtieth of Egypt is populated.
- People live on both the banks of the Nile in a strip of land, which has a maximum width of about 25 km. At places, it is not more than two or three km wide.
- The Nile is the longest river in the world. Its source lies in Lake Victoria. This lake is located in the equatorial region, where it rains heavily throughout the year.
- It, therefore, collects a large volume of water before entering Egypt.
- At Cairo, the river splits into a number of channels, distributing its water over a wide tract. Such channels by which river water is distributed are known as **DISTRIBUTARIES**.
- Agricultural land is very limited in Egypt. Only 3 per cent of the total land is under cultivation.
- However, nearly 2/3rd of the population is engaged in agriculture.
- Even though the Nile Valley and its delta are one of the world's most fertile lands, agriculture cannot be carried out without irrigation.
- The flood water of the Nile has been used for irrigation with great skill for the last 5,000 years.
- The Egyptian farmer, called **FELLAH**, has to work very hard on his small field but he is able to grow at least two crops annually.
- The principal crops of Egypt are maize, rice, wheat, millet, and sugarcane. Date is an important product, grown especially in oases.
- Cotton is the most important cash crop of Egypt. It is world famous for its fine quality.
- Several high dams have been built on the Nile. The largest among them is at Aswan.
- Canals taken from the dams irrigate crops throughout the year. Hydroelectricity is also produced at these sites.
- Mineral oil is the most important mineral

wealth of Egypt. It is found in Sinai and along the Red Sea coast.

- Other minerals such as phosphates, sea salt, manganese and iron ore are also produced.
- The cotton textile and food industries are quite important and also the oldest. Engineering industries, i.e. manufacture of different kinds of equipments, chemical industries, i.e. manufacture of fertilizers, glass, soap, etc. and oil refineries are developing fast.
- The average density of population is 46 persons per sq. km.
- The actual distribution, however, is very uneven. In the Nile Valley it is more than 90 persons per sq. km.
- Al Qahira (Cairo), the capital of Egypt is the largest city of Africa. The famous pyramids and sphinx are located near Cairo.
- Al Iskandariya (Alexandria) is the chief sea port and the second largest city of Egypt.
- Bur Said (Port Said) at the Suez Canal is a big trading centre.
- The roads and railways run along the course of the river Nile. The network of transport lines is very dense in the delta region. However, there are roads in all directions.
- Cairo is the centre of the transport system. Besides, it is also a very important international airport. But, it is the Suez Canal, which has put Egypt on the world map of international trade.
- This canal was cut across the isthmus, which separates Africa and Asia. It now links the Mediterranean sea with the Red Sea.

SOUTH AFRICA - LAND OF GOLD AND DIAMONDS

- South Africa lies in the southernmost part of the continent. It is a large country, about three-eighths the size of India, but has only a small population.
- It has a variety of natural resources. It is known for its mineral wealth, particularly gold and diamonds.

- Almost the whole of South Africa is a high plateau sloping towards the west.
- The Drakensberg mountains in the east from the edge of this plateau. Some of its ridges are higher than 3,000 m.
- To the east of these mountains, the land drops down rapidly. To the south, the land drops down in steps.
- The plateau region is covered with grasses. It is called 'the veld'. It is a Dutch word, which means field.
- South Africa lies in the warm temperate zone. It has a moderate climate due to several reasons. It is surrounded on three sides by oceans. The great height of the plateau is another reason for its cool climate. The cold ocean current along the west coast further cools it.
- The Orange and the Vaal rivers flow from the Drakensberg Mountains westward to the Atlantic Ocean.
- The Limpopo River flows along the northern boundary of the country for some distance.
- The rainfall is not much and decreases from south to north and from east to west.
- Most of the country has rains in summer but the southern coast gets rain during winter.
- Since a large part of the country on the western side does not get sufficient rain, it is a dry land. The eastern part has a good rainfall but most of it is hilly and unsuitable for cultivation.
- It is only in the veld region in the north central part that the land is fertile and rainfall is moderate. As such only one eighth of the total land of South Africa is under cultivation.
- Maize is the most important crop. Wheat, oats and barley are also grown.
- It is more important than the cultivation of crops. The breeding and rearing of animals on pastures is known as PASTORAL FARMING.
- Cattle, goats and sheep are reared for their milk, meat, wool and skin.
- The Merino sheep of South Africa are famous for their fine wool. In fact, as an exporter of

wool, South Africa is next only to Australia.

- In some areas cultivation of crops is combined with animal rearing. This type of agriculture is known as MIXED FARMING.
- South Africa is the leading producer of gold and diamonds in the world. It accounts for nearly half of the world's production of gold.
- The gold mines are near Johannesburg. Rocks containing gold are blasted, crushed, washed and sorted. Then with the help of chemicals, gold is dissolved and separated from the ore.
- The centre of diamond mining is Kimberley.
- Platinum, manganese, uranium, copper, iron, asbestos and coal are the other important minerals of the country.
- Mining is the most important activity of the people.
- South Africa is the most industrialized country of Africa. It manufactures a number of products from its agricultural raw materials.
- Tinned fruits, processed food, sugar, cigarettes, meat, dairy products and textiles are the important products.
- The iron and steel industry has become a major industry. Metal works and chemical industries are also developing.
- The density of population is only 26 persons per sq. km.
- Nearly two-thirds of the population consists of the Blacks. Less than one fifth of the population is composed of the Whites. The rest of the population includes the Asians and mixed groups.
- Johannesburg is the largest city of South Africa. It is a commercial and industrial centre.
- Pretoria is the administrative capital of the country.
- Cape Town is the seat of legislative and the largest port.
- The other two important ports are Durban and Port Elizabeth.
- The country has a good network of railways.

NORTH AMERICA

Land and Climate:

- It is the third largest continent, following Asia and Africa. To the north is the Arctic Ocean, where the continent breaks off into a series of cold and barren islands.
- In the south, the continent tapers to a narrow strip of land known as central America, which connects North America and South America.
- A group of islands known as the West Indies, are also included in this continent.
- There is variety in the land and climate of North America. Northern parts like Greenland, Alaska and Canada belong to the cold Arctic zone.
- The warm beaches of the tiny Caribbean islands and the tropical rain forests of Central America lie in the south.

Physical features: North America has four major physical divisions. They are:

1) The Canadian Shield:

- It covers nearly half of Canada in the north. It is formed of ancient hard rocks. Due to continuous erosion and weathering its average height has been reduced to less than 300 to 400 metres.
- A large part of it is covered with swamps and a number of lakes like the Great Bear, Winnipeg and the Great Lakes (Lake Superior, Lake Michigan, Lake Huron, Lake Erie and Lake Ontario).
- Its northern part remains covered with snow and ice for most of the year. The southern parts of the shield are the lowlands of the Great Lakes and the St. Lawrence River.
- The famous Niagara Falls is located between Lake Erie and Lake Ontario. St. Lawrence is an important river of the region and falls into the Atlantic Ocean. It is the busiest inland waterway in North America.
- The shield is a treasure-house of valuable mineral resources like gold, silver, nickel, iron, copper, platinum, radium, cobalt and uranium.

2) The Appalachian Mountains:

- Located in the northeast, they are also known as the Eastern Highlands. The height of these mountains varies from 1,000 metres in south western Pennsylvania to 1,800 metres in Mount Washington.
- The Appalachian Mountains were once very high. Over the years, glaciers and rivers have eroded them. As such, the area is now a land of low relief.
- The Hudson river flows through the Appalachian Mountains. It is joined to the Great Lakes by the Erie Canal.
- A number of mineral resources are found here. They include coal, copper and lead.

3) The Central Lowlands:

- They lie between the Western Cordilleras and the Eastern Highlands – extending over a distance of about 2,000 km.
- From the delta of River Mackenzie in the north to the edge of the coastal plain in Texas in the south, its extension is more than 6,000 km.
- The central and southern parts are a vast low and flat river basin of the Missouri-Mississippi. This river basin has very fertile soil and is rich in agricultural resources.

4) The Western Cordilleras:

- The western part of the continent is a mountainous region known as the Western Cordilleras. It stretches from the north to the south along the entire length of the continent.
- The highest peak of the Cordilleras is Mt. McKinley. It is in Alaska and its height is 6,187 m above sea level. Most of the rivers of North America rise in the Western Cordilleras.
- The Western Cordilleras consist of several parallel ranges. The Rocky Mountain is most prominent among them.
- The Coastal Range and the Sierra Nevada are the two other ranges. These ranges enclose a few intermontane (enclosed by mountains) plateaus.
- The Great Basin is the largest intermontane

plateau of this continent. As the water of its rivers do not reach the oceans, it forms an area of inland drainage.

- South of the Great Basin is the Colorado plateau. The Colorado river and its tributaries have deep cut valleys in the soft rocks of this region.
- At places many of the gorges are as much as 1,800 m deep. Such very long and deep gorges with wall-like sides are known as CANYONS. The Grand Canyon of Colorado is the largest in the world.
- The Western Cordilleras also have many active volcanoes in Alaska and Mexico.
- In these areas, heat from the interior of the earth penetrates through the cracks to boil the ground water and sends it up to the surface in hot springs called GEYSERS.
- The most famous geyser is the Old Faithful in the Yellow Stone National park. It attracts tourists from distant places.
- The Western Cordilleras are covered with forests of fir, spruce and cedar.
- The area is also rich in coal, lead, zinc, gold and copper.

Drainage:

- North America has several rivers. They have played an important role in the economic development of this continent.
- St. Lawrence and the Great Lakes provide the largest inland waterways in the world as they link the highly industrialized parts of USA and Canada.
- The Mackenzie flows northward to the Arctic Ocean and passes through a very thinly populated forested region.
- By contrast, the Mississippi flows southwards through well developed farmlands. It is used to carry goods such as cotton, timber and petroleum.

Climate and natural vegetation:

- North America has a varied climate. Extending between the tropical zone in the south and the frigid zone in the north, North America is huge in size.

- The Western Highlands and the Appalachian mountains play an important role in shaping the climate of the continent.
- These relief features leave the central plains open to the influences of both the cold winds from the north and the warm winds from the south.
- The summers are hot except in the northern parts. Only the Arctic Zone and the Western Cordilleras are very cold.
- The Atlantic and the Pacific coasts, especially where they are washed by the cold currents, are less hot than the interior.
- However, places like New York suffer from heat waves when warm air moves up from the south.
- Ocean currents also influence temperature and rainfall in North America.
- The western coast in the north faces the winds coming from the west known as the westerlies and the southeastern coast comes under the influence of the trade winds.
- The westerlies bring heavy rainfall to the Pacific coast throughout the year.
- The northeast trade winds bring equally heavy rainfall to the Highlands of east Central America and the West Indies.
- However, parts of southwest United States and northwest Mexico remain extremely dry.
- In winter, there were wider regional variations in temperature than in summer. Winters are cold over much of North America.
- Winter temperature is much below the freezing point in the northern and central parts. Cold waves are sometimes experienced even on the northern shores of the Gulf of Mexico.
- Rainfall decreases in the interior parts. Temperature also decreases from the south to the north.
- In the extreme north of the continent, the climate is very cold and severe. The winters are long and snow covers the ground for eight to nine months. This is an area of PERMA FROST, i.e. permanently frozen sub-soil. The

summers are short and comparatively cool. During this period, only mosses, lichens, grasses etc. grow. This region is known as the TUNDRA. Polar bear, caribou, musk-ox and reindeer are the important animals of this region.

- To the south of the tundra region is a wide belt of coniferous forests known as the TAIGA. The taiga stretches from the Atlantic to the Pacific across Canada. The forest consists of balsam, fir and white and red pines, which yield softwood.
- South of the taiga region is the zone of mixed forests. It lies in southeast Canada and north east United States. Here, rainfall is moderate, winters are cold and summers fairly warm. This belt has coniferous as well as deciduous forests, which has trees like beech, birch, maple and oak.
- Tropical forests are found in Central America, eastern parts of Mexico and the West Indies. Here, rainfall is very heavy and the temperature is always high. The common trees of this forest are palm, mahogany and logwood.
- Grasslands are found in the interior plains of North America. They are known as the PRAIRIES. The prairies are known for tall and nutritious grasses. This zone has very cold winters and hot summers. Rainfall is light, occurring mostly in summer.
- The extreme southwest part of the United States and north-western Mexico receive very scanty rainfall. They form a rocky and sandy desert. Winters are cold and summers are hot here. The natural vegetation consists of a variety of cactus plants.
- The Mediterranean type of climate is found on the west coast of California. Here summers are hot and dry, and winters are mild with moderate rainfall. Trees consist of olive, pine, orange and cork oak.

Land resources:

- North America is very rich in agricultural resources despite the fact that only about one-

twelfth of its total area is under cultivation.

- This has been possible because of the fertile and well-watered plains and the use of scientific methods of farming.
- Agriculture is mostly of the extensive type. Farms are very large and machines do most of the agricultural operations.
- Although the yield per unit area is lower than that of the intensive type of agriculture, the overall production is high because of the large area under cultivation.
- As a result, a small proportion of the population engaged in farming is able to produce plenty of food. This is not only sufficient for home consumption but also leaves a lot of surplus for export.
- Maize, wheat, and barley are the important cereals grown in North America. The other important crops are cotton, tobacco, soyabean and linseed. About half of the world's maize is grown in North America alone.
- Wheat is grown in the prairie region of Canada and the United States. North America produces about one-fifth of the world's wheat.
- Cotton and tobacco are grown mainly in the southern parts of the Mississippi river basin. The soil and the climate in this region are favourable for the cultivation of cotton.
- Summers here are warm with moderate rain fall. A clear sky with abundant sunshine is ideal for ripening and picking of cotton balls. The United States and Mexico are the leading producers of cotton in North America.
- Along the Gulf Coast, rice and sugarcane are grown. The tropical lowland of Central America is famous for growing banana. The West Indies is known for sugarcane cultivation.
- The extensive prairie grasslands in the interior of North America and the mountain pastures are used for rearing cattle, sheep and horse.
- Dairy cattle are reared in humid regions, whereas cattle meant for meat are reared in

relatively dry regions.

- North America accounts for about 1/4th of the total cow's milk produced in the world. It is also a leading producer of meat. The United States provides about 1/5th of the total meat produced in the world.

Forest wealth:

- Coniferous forests cover most of Canada, northern United States and the Western Cordilleras. These forests are a great source of softwood. North America alone produces about 1/5th of the world's softwood. Pulp and paper are the important forest products of this region. Douglas fir and white pine provide house-building materials. Cellulose, resin and turpentine are obtained from softwood. Cellulose is used in manufacturing rayon cloth.
- In the southern part of the temperate regions, deciduous trees, pine apples, oak and beech grow along with coniferous trees. White pine and spruce trees yield pulp for newsprint, which is a kind of rough paper used for newspapers. The wood of oak and willow trees is used for making furniture. The sap of the maple tree is sweet and yields sugar.
- Tropical rain forests are found in southern Mexico and countries of Central America. These forests yield good quality hardwoods such as mahogany and logwood. Hardwood is used for making high quality cigar boxes and in the building industry.

Minerals and power resources:

- The Canadian Shield contains deposits of nickel, iron-ore, gold, platinum and copper. Lake Superior is the leading producer of high-grade iron ore in North America. Gold is found mainly in Ontario, which has the largest gold mine in the world.
- The Appalachian Highlands produce a large amount of anthracite and high-grade bituminous coal. They have the largest soft coal field in the world. Coal is used mainly by the iron and steel industries. It has been responsible

for the high degree of industrialization of this region.

- The Gulf Coast and the Atlantic coastal plain produce much of the world's petroleum and natural gas. USA is the second largest of natural gas in the world.
- Sulphur, phosphate and potash are also found here. Phosphate and potash are used for manufacturing chemicals and fertilizers.
- The Western Cordilleras have vast deposits of copper. This region also possesses mineral oil, natural gas, coal and rock phosphate.
- The largest deposits of lead and zinc in the world are found in British Columbia. Mexico has been the leading world producer of silver for many years.
- North America is very rich in water power resources. Hydro-electricity is produced on a very large scale in the continent.
- The St. Lawrence river, the Appalachian region and the valleys of the Tennessee, the Colorado and the Columbia rivers provide numerous sites for developing hydroelectricity.
- The Niagara Falls is a great source of hydro electricity in North America.

Fisheries:

- The shallow seas around the north-eastern coast abound in fish. Such vast areas of shallow sea near the coast abounding in fish are called FISHING BANKS. The Grand Bank near the coast of New Foundland is famous for fishing.
- On the Pacific Coast, tuna and salmon are the main fish catches. Fish are processed and tinned for domestic use as well as for export.

Population:

- The North American population consists of the original inhabitants – the native Indians – and the people who came from different parts of the world during the last few centuries and settled here.
- The earliest migrants came from western Europe, i.e. Spain, Portugal, France, the

Netherlands and the British Isles.

- North America contains nine per cent of the world's population.
- The distribution of population is influenced by several factors such as topography, climate and the availability as well as the utilization of minerals and other resources. Ninety per cent of Canada is still virtually uninhabited because of the harsh climate. The majority of its people lives along the narrow southern fringe, where the climate and oil are favourable for human habitation.
- On the other hand, eastern United States and the Central lowlands are densely populated. While fertile soil, and good climatic conditions have favored cultivation in the central lowlands, the availability of mineral and power resources and good network of transport have helped in developing a variety of industries in the north-eastern part. Several industrial regions have emerged in these areas. Most of the big cities of North America are, therefore, located here.
- In Mexico, the densely populated part in the central region around Mexico city, which is the largest city in the world.

Transport:

- North America has a well-developed modern system of transport. It has a dense network of roads and railways.
- They mostly run in the east-west direction. The coastal and inland waterways continue to be the bulk carriers.
- The southern parts of Canada and most parts of USA have a good network of broad and well-surfaced roads. Many roads are wide enough to allow four to six vehicles to run together in one direction. These roads are meant for fast traffic and are known as FREEWAYS or SUPERWAYS.
- North America has an extensive and efficient network of railways. There are several trans continental railways in Canada and in the United States. There is a dense network of rail

ways in the eastern half of North America.

- There are many good ports in North America. Most of them are located on the Atlantic coast.
- Bulky and heavy goods are generally transported by the major inland waterways since water transport is cheaper than the other means. The Mississippi and St. Lawrence are the large navigable rivers. The Great Lakes together with St. Lawrence form the largest and busiest inland waterways in the world.
- The Panama Canal connects two great oceans the Atlantic and the Pacific. It is of great commercial and strategic importance.

THE UNITED STATES OF AMERICA

- The United States of America or the USA is the fourth largest country in the world, in area, after Russia, Canada and China.
- It consists of 50 states including Alaska and Hawaii.
- The USA stretches from the Atlantic Ocean in the east to the Pacific Ocean in the west.
- The USA has a varied terrain – mountains, plateaus and plains drained by a number of rivers.
- They are: The Western Cordilleras, the Central Lowlands and the Eastern Highlands.
- The Western Cordilleras consists of several high and rugged mountain ranges running from the north to the south.
- The Rockies, the easternmost range, is the highest of them. To its west lies the cascade Range in the North and the Sierra Nevada in the south.
- Close to the Pacific Ocean lies the Coastal Range. Mt. Whitney with a height of 4,418 m above sea level, is the highest peak.
- There are high plateaus and valleys enclosed by the Cascade and the Sierra Nevada ranges on the one hand and Rockies on the other.
- The Great Basin located between the Sierra Nevada and the Rockies is an area of inland drainage. There are several national parks in the Western Cordilleras. The Yellow Stone

National Park is a great attraction for tourists because of the high peaks, canyons, volcanoes, hot springs and geysers.

- The Central Lowlands bounded by the Rockies on the west and the Appalachians on the east, is a vast plain area.
- It is drained by the river Mississippi and its tributaries. This region is the most fertile part of the United States.
- The Eastern Highlands consists of the much eroded old mountains – the Appalachians.
- On either side of these mountains, there are narrow and low plateaus called PIEDMONT plateaus.
- The USA has a great variety of climates. The south-eastern part of the country receives fairly good rainfall from the warm moist air coming from the Gulf of Mexico and the Atlantic Ocean.
- The amount of rainfall decreases from the south to the north and from the east to the west.
- Snowfall is confined to the northern part of the country.
- Temperature, in general, decreases from the south to the north. The southern parts have long and hot summers. Winters are short and mild. In contrast, summers are short and warm in the north.
- Winters on the other hand, are long and cold. The Central Lowlands have the continental type of climate. The rainfall is light, mostly concentrated in summer.
- This region receives some snowfall during winter as there is no mountain barrier in the north.
- The climate of the western part is more varied. The north-western part receives heavy rainfall throughout the year under the influence of the Westerlies.
- On the eastern side, rainfall decreases. Hence, the Great Basin and the Colorado plateau are deserts.
- The high mountain peaks remain covered with snow throughout winter. Southern California

has a typical Mediterranean climate.

- In the USA, the coniferous forests are confined to the Great Lakes region and the Western Cordilleras.
- The giant Redwood and Douglas fir are the well known trees of the north-western part of America.
- The most dominant natural vegetation here consists of mixed forests. They contain both coniferous and deciduous trees.
- The natural vegetation of the Central Low lands is the prairie grass.
- In the desert region of southwestern United States, especially in the basin of the Colorado River, the natural vegetation consists of cactus and a few varieties of thorny bushes.
- The USA holds a dominant position in the world because of its high economic development.
- It has been a leading producer of both industrial and agricultural goods.
- It is also a leader in the development and application of innovative technology. Because of its enormous output, the United States has a major share in world trade.
- The farms, factories, stores and banks in the USA are owned and managed by private investors.
- About one-fifth of the total area of the country is under cultivation. Most of it lies in the Central Lowlands.
- This area has fertile soil, flat and well watered land. Here farms are large. These vast agricultural lands are cultivated by a very small proportion of the country's population.
- They practice extensive farming. As a result, this small percentage of population is able to produce plenty of food for the entire population of the United States and there is also surplus for export.
- The country, however, faces some environmental problems due to excessive use of insecticides and pesticides.
- Efforts are being made to find new

eco-friendly techniques so that development activities can be sustained for a longer period.

- Eco-friendly techniques are those methods and activities, which do not affect the environment adversely.
- Maize, wheat, oats and barley are the important cereals grown here. Some other crops are soybean, cotton and tobacco. Maize is the most important crop. The United States produces nearly half of the world's maize. Most of the maize produced is used for feeding cattle, pigs and poultry.
- The United States is the second largest producer of wheat in the world. It exports wheat and wheat flour in large quantities to other countries.
- Oats and barley are produced mainly to feed animals. An important feature of agriculture here is the growing of one predominant crop in large areas.
- About one-third of the world's cotton is grown by the United States. It is grown in the southern parts.
- The country is also a leading producer of tobacco. Potatoes, sugar-beet and a variety of fruits are grown here on a large scale.
- Animal rearing is an important activity in the USA. The country has a large number of cattle, pigs and sheep.
- Large herds of beef cattle are reared in grassy plains and plateaus of western United States. This region is known for cattle ranches.
- A Cattle ranch consists of pastureland and a group of buildings, which serve as the headquarters. There are separate buildings for the owners, the cowboys and for different activities. There are storehouses, sheds for machines, shops, and special places called corrals for sorting, branding and breeding cattle.
- Dairy farming is also carried on mainly around the Great Lakes region and in the north eastern parts of the country.
- The cool, humid climate is favourable for

milch cattle. Most of the dairy farms are located near large cities.

- Fishing is an important activity of the country. Fishing is done both in the open seas along the Atlantic and the Pacific coasts and in inland waters.
- Modern techniques of fishing are used. Ships are fitted with computer-controlled sensors for locating the potential fishing grounds.
- Fishing fleets carry huge fish processing factories and refrigeration plants.
- Forests cover about one-fourth of the area of the country. Lumbering contributes nearly one per cent to the national income of the United States.
- The country leads the world in the production of temperate hardwood, which is largely used for making furniture.
- It ranks second in the production of softwood, which provides timber for construction purposes and also wood pulp for the manufacture of paper and rayon.
- The country is very rich in metallic minerals such as iron, copper, zinc, lead and gold. It is one of the largest producers of copper and silver in the world.
- The major deposits of iron ore are found in the Lake Superior region. It has large deposits of bauxite, uranium, phosphate, potash and sulphur.
- The USA has large reserves of coal, which are found mainly in the Appalachian region. It is also one of the leading producers of petroleum in the world.
- Its major oil fields are located in the central plains and along the Gulf Coast.
- Natural gas, found in association with petroleum, is also produced in large quantities.
- The main fields of natural gas are located in Texas, Louisiana, Oklahoma and New Mexico.
- The country is rich in water resources as well. It is one of the leading producers of hydro

electricity in the world. Most of the power plants are located in the mountainous areas of the west.

- The country has also set up several atomic energy plants, which produce electricity.
- The USA is one of the leading industrial countries of the world as huge mineral deposits, varied agricultural crops and animal products provide raw materials for its industries. There is enough fuel or power to run big factories. It has ample capital and skilled labour.
- Iron and steel is the most important industry of the United States. Steel is used for manufacturing goods like automobiles, heavy armaments, railways wagons, locomotives, machine tools and machines.
- The USA is the leading producer of aeroplanes in the world. In the field of manufacturing automobiles, it is one of the world producers.
- Detroit is the chief production centre for the automobile industry.
- Oil refining and petro-chemicals are the other major industries.
- Smelting of ores and production of automatic machines, a variety of electrical goods, textiles and chemicals are also important.
- Paper and food processing industries are the other large-scale industries of the United States.
- Most of the industries in the country are located in the north-eastern part of the United States.
- The leading manufacturing centres of this region are Boston, New York, Philadelphia, Detroit and Chicago. Los Angeles is an important industrial centre on the western coast.
- About three-fourths of the total population lives in the eastern half of the country. Seventy four per cent of the people in the United States live in cities.
- New York is the largest city of the country.
- Los Angeles is the second largest city of the

United States. Washington D.C. is the national capital of the country.

- The transport system of the USA is very good. All the large cities are well connected by rail ways, roads and airways. Automobiles are the most effective means of daily transport.
- Railways form a vast network throughout the country.
- Transcontinental railways link the Atlantic coast with the Pacific coast.
- Chicago is the main terminus of the railways. It is the world's largest railway junction.

CANADA

- Canada occupies the northern part of North America (excluding Alaska and Greenland).
- It is the second largest country in the world. It extends from the Atlantic Ocean in the east to the Pacific Ocean in the west. It is bounded on the north by the Arctic Ocean and on the south by the United States of America.
- The northern part of Canada consists of many islands, big and small. The coastline of Canada is highly indented.
- The overall pattern of the Canadian landform is simple. It has three main physical divisions the Canadian Shield, the Interior Plains and the Cordilleras Region.
- **The Canadian Shield:** The Shield is the largest and oldest physical feature of Canada. It has numerous lakes and swamps. Its northern part is covered with snow and ice for most of the year.
- The southern part has coniferous trees. It is rich in metallic minerals like gold, silver and nickel.
- To the south and southeast of the Shield are the Lowlands of the Great Lakes and the St. Lawrence river.
- About 60 per cent of the total population of Canada lives in these lowlands.
- This region is the most productive part of Canada. It has farmlands, dairy farms and fruit orchards.

- St. Lawrence is the most important river of Canada. It flows out of the Great Lakes and falls into the Atlantic Ocean.
- It is one of the busiest inland waterways in the world.
- The plateaus of Labrador Peninsula are located east of the Canadian Shield. They are the extensions of the Appalachian mountains.
- **The Interior Plains:** To the southwest of the Canadian Shield lie the interior plains known as the PRAIRIES. These plains are mostly flat and rise towards the Rockies. They are very fertile.
- The prairies are famous for wheat production.
- In some parts, cattle are reared.
- This region is rich in a few mineral resources such as gold, coal and petroleum.
- The interior plains are fast becoming very prosperous parts of Canada.
- **The Cordillera Region:** The Cordillera region of Canada includes the mountains and plateaus of the west.
- From the east to the west, you will find the Rocky mountains, high plateaus and coastal ranges respectively.
- This region is rich in forest resources, minerals and hydroelectric power. Agriculture is the common occupation of the valleys..
- Its climate is generally cold. Winters are long and extremely cold. Summers are short and cool.
- The northern part of Canada generally remains covered with snow and ice. Cold winds from the north blow in winter. These winds are often accompanied by powdery snow and sometimes by ice crystal called BLIZZARDS.
- The Pacific coast of Canada has little variation in temperature. It experiences cool summers and mild winters.
- Western Canada has a relatively milder climate compared to the eastern part. Warm currents in the western and south-eastern parts bring good rainfall in these regions. These currents also increase the temperature in these areas.

- Tundra, taiga and prairies are the important vegetation belts.
- To the south of the tundra lies a vast region of coniferous forests known as the taiga. It occupies about two-fifths of the total area of Canada.
- The poplars are most common trees in south west taiga.
- The grasslands of the prairies extend from Lake Superior to the foothills of the Rockies.
- Only about seven per cent of the total area of Canada is suitable for agriculture. About 80 per cent of Canada's farmland is in the prairies.
- Wheat is the chief crop. Canada is one of the leading exporters of wheat in the world market.
- Oat, barley, rye and rapeseed are the other important crops of Canada. Most of the agricultural work is done by machines.
- Nova Scotia is noted for its large orchards of apples.
- Cattle rearing is an important occupation in the drier parts of the prairie region, especially towards the Rocky Mountains.
- Meat production is very high.
- Lawrence valley and around the Great Lakes, mainly dairy cattle are reared.
- A large part of Canada is covered with coniferous forests. For more than a century, forest products have been important export items of Canada.
- Pulp and paper are the most important forest products. Canada accounts for nearly one-third of the world's production of newsprint.
- Lumbering is one of the important occupations of the people of Canada. People who work in the forests fell trees, help in logging, splitting and hauling lumber. These forest activities are collectively known as **LUMBERING**.
- The lumber-jacks live in hog huts built for their winter residence in the lumber camps.
- Fishing is an important economic activity of a large number of people in Canada. It is carried out mainly along the eastern coast.
- New Foundland is famous for fishing. With an average annual fish catch of about 14 million tons, Canada exports about three-fourths of it.
- Thus it is one of the main fish producing and exporting countries of the world.
- Mining is one of the primary industries of Canada. Several important minerals are found here.
- These are nickel, potash, uranium, molybdenum, silver, gypsum, sulphur, copper, titanium, platinum, cobalt, gold and iron ore.
- The largest deposits of iron ore are found along the Labrador-Quebec border. Canada is among the chief exporters of iron ore in the world. It exports four-fifths of its total production.
- Among mineral fuels, Canada produces coal, petroleum and natural gas. Most of Canada's petroleum and natural gas supplies come from Alberta, which accounts for 90 per cent of the total production.
- Coal is found in the widely scattered areas of the country on the coasts of the Pacific and the Atlantic Oceans.
- The water power resources of Canada are very large. About 70 per cent of its total power is generated by water.
- The Niagara Falls is an important source of waterpower for both Canada and the United States. The development of waterpower has made Canada a leading industrial country.
- About one-third of the total population in Canada depends directly on its manufacturing industries.
- Manufacturing transport equipment, pulp and paper, machinery and chemical products, petroleum refining, meat processing and smelting of ores are important.
- Most of the industries are highly mechanized and capital intensive.
- The region around the Great Lakes is highly industrialized. There is a heavy concentration of industries like automobiles, electrical

- goods, and iron and steel plants in Ontario.
- Quebec, the second most industrialised province, relied on its excellent water resources to maintain its lead in the pulp, paper and aluminium industries.
- Toronto and Montreal are also important industrial and commercial centres.
- Canada is the largest production of newsprint in the world. This industry is based on the soft wood timber obtained from the coniferous forests found in southern Canada.
- The smelting and refining of metals, from ores, such as zinc, nickel, uranium, copper, gold, silver and aluminium are important industries in Canada.
- It imports bauxite from Jamaica and Guyana for its aluminium smelting plants. Using its abundant supply of cheap hydroelectric power, it produces aluminium for export.
- The average density of population is less than three persons per sq. km. in Canada.
- The distribution of population is highly uneven.
- Nearly 80 per cent of the people live in a narrow belt less than 300 km wide along the southern border.
- The rest of the country has very sparse population due to excessive cold.
- More than three-quarters of Canada's population live in urban areas. The level of urbanization in Canada surpasses the estimated world average.
- Toronto is the largest city of Canada and one of the busiest ports on the Great Lakes.
- Other important cities are Montreal, Vancouver and Ottawa. Ottawa is the capital city of Canada.
- Rail and roads of primary importance in the Canadian economy. Canada's vast size and difficult topography made the construction of railways and roads expensive but essential.
- There are two transcontinental railways in Canada. The Canadian Pacific Railway runs from St. John's in New Brunswick to

Vancouver on the Pacific Coast. The Canadian National Railway connects Halifax in Nova Scotia to Prince Rupert in British Columbia.

- Automobiles are very popular for covering short distances. The Trans Canada Highway is about 9,600 km long.
- There is a good network of highways in the lowlands of St. Lawrence and the industrial region around the Great Lakes.
- A number of canals connect St. Lawrence to the Great Lakes. Built jointly by Canada and the United States, they provide excellent inland waterways.
- The inland waterways are largely limited to the St. Lawrence, the Great Lakes and the Mackenzie in the north.
- Air routes link all the main towns and cities of Canada.

SOUTH AMERICA

- South America is the fourth largest continent in the world. About two-thirds of the continent lies in the tropical belt south of the equator.
 - South America, Central America, Mexico and the West Indies together make up Latin America.
- Land:** South America has the following physical divisions – the Western Coastal Strip, the Western Mountains, the Central Plains and the Eastern Highlands.
- (a) The Western Coastal Strip:**
- There is a narrow strip of lowland along the Pacific Coast in the western part of South America. It stretches from north to south with great variations in its width.
- (b) The Western Mountains:**
- The West Mountains run from the Caribbean Sea to the very southern tip of South America. These are called the ANDES. They form the second highest mountain systems in the world next to the Himalayas.
 - There are three main ranges in the Andes. Two

of them on the eastern side are very high. These ranges come closer at a few points and separate again.

- In between these ranges there are high plateaus. The Bolivian Plateau is one of them. Lake Titicaca, one of the largest lakes of South America is located in this plateau region.
- The Andes have several lofty peaks. Many peaks are so high that in spite of being located near the equator they are covered with snow all the year round. Mt. Aconcagua is the highest peak of the Andes. It is 7,021 m high above sea level.
- The Andes have several volcanic peaks. Some of them are active, others are dormant or extinct.
- Cotopaxi in Ecuador is the highest active volcano in the world. Volcanic eruptions and earthquakes are very common in this part.

(c) The Central Plains:

- They lie between the Andes and the eastern Highlands. The central plains mainly consist of the basins of the Orinoco, the Amazon and the Plata.
- The Amazon is the largest river in the world as it discharges the greatest volume of water.
- It rises in the Andes and after flowing through the entire width of Brazil, falls into the Atlantic Ocean. It is 6,280 km long.

(d) The Eastern Highlands:

- The Guyana and the Brazilian highlands along the eastern coast form the Eastern Highlands.
- The Angel Falls is the highest waterfall in the world. It is located in the south eastern part of Venezuela.

Climate and Vegetation:

- The greater part of South America lies within the tropical zone. Therefore, its climate is generally hot. The Amazon basin, which lies close to the equator, has an equatorial type of climate. It is hot and wet all the year round. This region is, therefore, covered with equatorial rain-forests locally known as the SELVAS.

- On either side of the Amazon forests lies the belt, which has the Savannah type of climate. This is the region of grasslands. In the north, in the Orinoco river basin, they are locally known as the LLANOS. In the south, in central Brazil, they are known as CAMPOS. In this region, there is a distinct dry period and the rain occurs mainly in summer.
- In the lowlands of northern Argentina and western Paraguay, it is dry during winter and wet during summer. Rains are heavy. This region is covered with thick forests and grass lands and is locally known as the GRAN CHACO.
- Parts of southern Peru and northern Chile have a typical hot, desert type of climate. This region is known as the Atacama Desert. Its natural vegetation consists of scrubs, prickly pear and cactus.
- Further south, that is in central Chile, there is the Mediterranean type of climate. This region has rainy winters and warm and dry summers. Its vegetation consists of evergreen forests with trees having thick and shining leaves, which are able to resist summer droughts. Oak, walnut, chestnut and fig are some of the common trees of the region.
- In the extreme south that is in southern Chile there is the OCEANIC or MARINE type of climate. Rainfall occurs here all the year round. As the region lies in the temperate zone, the climate is cool. This type of climate is generally found on the western coasts of the temperate regions. It is a region of temperate, mixed forests where beech and pine are the valuable trees.
- South of the tropical grasslands of southern Brazil lies the region of temperate grasslands. This region has a warm climate with rain all through the year, although it rains more in summer than in winter. These grasslands in central Argentina are known as the PAMPAS.
- Further south, on the eastern side of the Andes, lies the desert of Patagonia. Its climate is dry

because it lies in the RAINSHADOW AREA of the western mountains.

Forests:

- A very large part of the continent is covered with forests. Most of these, in the Amazon basin, are tropical rain forests.
- They are important storehouses of hardwoods such as mahogany.
- The lightest wood in the world, balsa, also comes from rain forests.
- The Carnauba palm trees of Brazil yield wax. It is used for furniture, polish, shoe polish and candles.
- Other products include cinchona bark (used for the medicine, quinine) and chicle (used for chewing gum).
- The Amazon basin is the home of the rubber tree.
- The rain-forests in general, have not been utilized very much due to several difficulties. For example, a variety of trees are found in a small area making it uneconomical to fell trees of a particular species at a time.
- Besides, these forests are dense and inaccessible because of the lack of transport facilities. It is difficult to construct and maintain roads and railways in such areas.
- Yerba is an important tree of the Eastern High lands. Its leaves are brewed like tea.
- Quebracho, meaning 'axebreaker', is an important hardwood tree of the Gran Chaco. It yields tannic acid used for tanning leather.
- The forests along the eastern slopes of the Andes are known as montana. They yield valuable softwood.

Wildlife:

- South America abounds in a variety of wild life, especially in the Amazon basin.
- The continent possesses about 1,500 species of very colourful birds.
- Candor is the largest bird of prey in the world.
- Rhea is a flightless bird. It is like the ostrich of Africa and the emu of Australia.
- Monkeys are important tree dwellers of the Amazon forests.

- The spider monkey is known for its acrobatic skills.
- The owl monkeys are night lovers. Then, there are squirrel monkeys, which are known for their gentleness.
- There are many kinds of reptiles. Snakes and pythons are the most common among them.
- Anaconda is a very large python, which is about ten metres long.
- Ant-eaters and armadillos are the most ancient types of mammals found in South America.
- Puma is a dangerous animal of the cat family. It is stronger than the leopard.
- Jaguar is another animal of prey. Both these animals live on land as well as on trees. They prey upon monkeys and other tree dwellers.
- Llamas are the strange animals of South America. They live in the highlands of the Andes. Being surefooted they are used as beasts of burden in this mountainous region. These long-necked animals belong to the family of the camel and go without water for many days.
- Alpaca is a smaller variety of llama found on the high plateaus.
- Guanaco, a wild variety of llama is found in the desert of Patagonia.

Water:

- South America has huge water resources. However, it has not yet begun to make full use of these resources.
- Though there are several rivers, only the Orinoco, the Amazon and the Parana are really long and deep enough to be used for water transportation.
- Hydroelectric power generation has increased in recent years. Brazil, Argentina, Paraguay and Venezuela have built large hydroelectric plants. Brazil, in particular, has developed a number of hydroelectric projects.

Fisheries:

- Sea waters around South America, especially along the western coast, abound in fish.
- South America accounts for about one-fifth

of the world's total catch of fish.

- Fishing is an important industry of Peru.
- It is one of the leading countries of the world in the fishing industry.

Soil and Crops:

- Only about 10 per cent of the soil is suitable for farming. Most of the farmland is found in Argentina and Uruguay.
- A large part of the grasslands have been brought under cultivation. Another important farming region is along the Pacific Coast in the middle part of China.
- Wheat and maize are the important food crops of South America. Wheat is a crop of cool, temperate regions. It is grown in Argentina and Chile.
- Maize required a warm climate with a fair amount of rainfall.
- Its main producers are Brazil and Argentina.
- In fact, maize is native to South America and it reached the rest of the world after the discovery of this continent.
- Coffee, sugarcane, cocoa and banana are important cash crops, which are grown on large plantations.
- Growing of plants or trees on a large scale for commercial purposes is known as **PLANTATION AGRICULTURE**.
- Brazil, Colombia and Ecuador are among the leading producers of coffee in the world. Cotton is another important cash crop grown in Brazil.
- There are large farmlands and plantations in South America. These are owned by a few individuals or groups of people.

Animal Rearing:

- South America has extensive grasslands on which cattle, sheep and goats are reared in large numbers mainly for beef, meat and wool.
- The most important cattle rearing areas in South America are the semi-humid parts of Argentina, Uruguay and Brazil.
- In these areas the original grasses, which were not very nutritious, have been replaced by a

more valuable variety of grass – **ALFALFA**.

- The alfalfa is a leguminous plant, besides being nutritious, helps in maintaining the fertility of the soil. Cattle fatten very quickly on these grasses.
- The sheep-rearing areas are in Argentina and Chile. South America is among the world's leaders in cattle and meat production.
- Argentina's main industry is meat-packing and processing. Today it is one of the largest meat exporters.

Mineral wealth:

- South America is very rich in minerals. There are huge deposits of mineral oil in Venezuela and the islands of Trinidad and Tobago.
- Much of the oil is being drilled from below the lake waters in Maracaibo in Venezuela.
- Asphalt or coal tar is found in Trinidad. About one-seventh of the world's mineral oil comes from South America. Its iron-ore reserves are equally important.
- Brazil has one of the largest iron ore deposits of the world.
- Copper and tin are among the other important minerals of South America. They constitute about one-fifth of the world's total output.
- Chile is the major producer of copper in the world. Bolivia is the world's fourth largest producer of tin.
- South America is very fortunate to possess rich deposits of nitrates in the desert of Atacama. Nitrate is an important source of manures and fertilizers. Chile is the largest producer of nitrates. Similarly, Guano Islands, off the coast of Peru, are extremely fortunate in having the world's most concentrated single source of natural manure.
- These rainless and desert islands are the home of millions and millions of Guano birds. These birds live entirely on sea fish. It is believed that they consume nearly five million tonnes of fish in these waters every year.
- The droppings of the seabirds have been in use for several hundred years as valuable

manure for a variety of crops.

- Today they are in great demand for sugarcane and cotton crops. This natural manure contains all the ingredients of plant food that can be readily assimilated by the plants.
- Apart from these minerals South America possesses sizeable reserves of bauxite, manganese, silver and antimony.
- Surinam and Guyana are the major producers of bauxite in the continent.

The People:

- The people of South America belong to three main racial groups. They are the American Indians, the Blacks and the Europeans.
- Besides these, there are a large number of people of mixed races.
- They are MESTIZOS, a new race of people of mixed Indian and European blood.
- MULATTOS, another race of people of mixed European and Black blood, and ZAMBO, yet another race of people of mixed Black and Indian blood.
- Among these mixed races, the mestizos form the large group. People of Indian origin have settled in large numbers in Surinam, Guyana and the islands of Trinidad and Tobago.
- The density of population is about 15 persons per sq. km. But the distribution of population is very uneven. Nearly one-half of the continent has a population density of less than two persons per sq. km.
- Large areas of the Amazon Lowlands, the Lianos, the Gran Chaco, the Guyana Highlands, Atacama and Patagonia deserts are practically uninhabited. These lands fail to attract people because of their unfavourable climates.
- The most densely populated areas of the continent are near the coast.

Transport:

- The modern means of transport are not well developed in South America.
- The extensive equatorial forests, the high mountain ranges of the Andes and the

Eastern Highlands have stood in the way of a good network of land transport.

- Rivers are the only means of transport in the forests of Amazon basin. Cheap river transport is provided by the Amazon and the Plata river systems. These rivers are navigable for long distances.
- The main railways and roads are concentrated in the plains of Argentina and Brazil.
- Some of the highest railways of the world are across the Andes in Chile.

BRASIL – THE COFFEE POT OF THE WORLD

- Brazil lies in the north-eastern part of South America and occupies a little less than one-half of the total area of the continent.
- In area, this is the fifth largest country in the world. It is more than two and half times the size of India. But its population is about one-sixth of that of our country.
- It is surrounded by the Atlantic Ocean from two sides. All the countries have common borders with Brazil except Chile and Ecuador.
- Brazil got its present name for the redwood tree, brasil, which was the most important product of the country, when it was discovered about 500 years ago.
- The greater part of the country is a vast plateau, known as the Brazilian Highlands. The eastern and south-eastern parts of the plateau are comparatively high. In these parts at several places, the highlands drop abruptly towards the narrow coastal plains.
- The northern part of the country is an extensive, flat lowland built up by the Amazon and its tributaries. They have brought down great quantities of alluvium (fine soil) from the surrounding highlands over centuries forming this great plain.
- In the extreme north lie some portions of the Guyana Highlands.
- Brazil is mainly a tropical country with a small

part in the south extending into the warm temperate zone.

- The Amazon basin and northern coastlands have the equatorial type of climate.
- Here the season is hot and wet throughout the year.
- A major portion of the Brazilian plateau has the savannah type of climate with rains during the summer.
- The natural vegetation of the region is the savannah grass.
- On the southern parts of the plateau the climate is mild and cool. The region is covered with temperate forests. Further south along the borders of Uruguay is the zone of temperate grasslands.
- Brazilians forests are among the richest in the world. They provide main useful products such as timber, gum, resins, waxes, essential oil, cellulose, fibres and nuts.
- Many kinds of timber are obtained from these forests. Balsa, a very light wood, is used for making lifeboats and as a substitute for cork. Its Parana pine is in great demand for building purposes.
- The bark of the cinchona tree is used for making quinine, which is a valuable medicine in treating malaria.
- Carnauba palm trees yield wax, which is found on its leaves.
- Brazil is the homeland of rubber. The rubber tree was first found growing wild in the Amazon forest. From here it was taken to the countries of Africa and Asia.
- Once the Amazon basin was the only rubber-producing region in the world. Today its production is almost negligible.
- Grasslands and permanent pastures occupy about one-eighth of the total area of Brazil.
- Therefore, animal rearing is a very important activity. Cattle, pig, sheep, goats and horses are the common domestic animals.
- Of these, the cattle are the most numerous and important. These animals are reared mainly

for their meat, wool and hide.

- Brazil is mainly an agricultural country. Fertile soils and warm climate favour growth of different kinds of crops.
- Maize, rice, beans, cassava and potatoes are the food crops grown mainly for local consumption.
- Coffee, cotton, sugarcane, cocoa and tobacco are grown mainly as cash crops. Coffee is by far the most important crop of Brazil.
- This crop was introduced in Brazil by the Portuguese more than 100 years ago. Today, Brazil is the largest producer and exporter of coffee in the world.
- Coffee is grown mostly on the slopes of the high plateaus in the tropical region. The coffee tree requires much rainfall and a high temperature, especially when it produces berries. At the time of harvest, it needs less rainfall and more sunshine.
- In Brazil, coffee is generally grown on very large plantations, which are called FAZENDAS. A large coffee fazenda usually covers an area of several square km. and may contain as many as a million coffee trees. On such a big fazenda, nearly 3,000 to 4,000 workers are required to look after the trees. They live on the fazendas.
- Each family looks after a certain number of trees. It has a small plot of land on which it grows maize, sugarcane and vegetable for its own use.
- Cotton is another important crop. Brazil is one of the leading cotton producing countries of the world.
- The north-eastern part of Brazil is known for its sugarcane plantations.
- Brazil is now an important producer of sugar as well. It is also one of the largest producers and exporters of cocoa in the world, standing next only to Ghana and Nigeria in Africa.
- Many kinds of fruits are grown in Brazil. Bananas, pineapples, oranges and grapes are the chief fruits of the country.

- Brazilian highlands like the plateau of South Africa are rich in minerals. The richest mining areas are in the state of Minas Gerais.
- Brazil is rich in high quality iron ore and mica. It also produces manganese and quartz crustal in large quantities. It exports manganese and iron-ore.
- Brazil lacks good quality coal, which hampers the development of its iron and steel industry.
- But Brazil is very rich in water resources. Its torrential rivers flowing towards the east and the south form a series of falls on their way as they drop from the Brazilian Plateau. This helps in generating electricity on a large scale.
- Most of the industries of Brazil are based on local raw materials and abundant supplies of hydroelectricity.
- The most important is the textile industry, which includes spinning and weaving of cotton and wool. Cities of Sao Paulo, Rio-de-Janeiro, Belo Horizonte and Santos are important industries centres. Brasilia is the capital city.
- Huge size of Brazil gives it a low density of population, i.e. about 16 persons per sq. km. Majority of the people live in the Atlantic coastal region.
- The Amazon lowland is very sparsely populated.
- Brazil depends a great deal on trade with other countries. For many years coffee has been its leading export. Cotton takes a second place. A great variety of other products such as cocoa, iron-ore, wood, sisal and sugar are also exported.
- Brazil imports mainly manufactured goods, especially machines, machine tools, coal, petroleum, chemicals, wheat and flour.
- Brazil has a long coastline and there are several port cities. At the moment, roadways and railways have developed mainly in the southern and eastern parts. But roads are being constructed in the interior parts.

ARGENTINA – THE LAND OF WHEAT AND CATTLE

- Occupying the southern part of the continent, Argentina is the second largest country of South America.
- Argentina owes its wealth to its rich grass lands, the pampas.
- Argentina is nearly four-fifths the size of India. But its population is even less than that of Gujarat.
- Argentina is mainly a country of lowlands. These lowlands lie to the east of the mountainous areas of the Andes. They run all through its length from north to south.
- In the north, they are occupied by marshy lowlands of the Gran Chaco.
- In the south, beyond the Colorado river, they merge into an extensive low plateau of Patagonia. With almost a flat surface, the plateau of Patagonia slopes gradually towards the east.
- The most important part of the lowlands is the pampas. In Spanish, it means ‘extensive plains’. The pampas are made up of deep, fine soil free from any stone. For thousands of years strong winds have carried fine rock particles from the dry west and deposited them in layers one over the other. In some places, these layers of fine soil are more than 300 metres deep. The pampas are, therefore, one of the most fertile grasslands of the world.
- The lofty mountains of the Andes form a boundary between Argentina and Chile. The Andes have several high peaks. Mt. Aconcagua is the highest of them all. In the southern part of the country, there are several lakes.
- The climate of Argentina is generally temperate. Temperature decreases from north to south and rainfall from east to west. Most of the rainfall comes in the summer months.
- Grass is the chief vegetation of Argentina. European grasses and alfalfa have now replaced original grasses that were less nutritious.

- The gran Chaco is a land of warm temperate forest interspersed with patches of savannahs.
- Quebracho is the most important tree of these forests. Its wood is very hard.
- The most valuable product of the forest in Argentina is the Quebracho tree. Tannin can be extracted from its bark. Tannin is a liquid used for tanning leather. The quebracho wood is used for making railway sleepers, telephone poles and fencing posts.
- Animal rearing includes cattle as well as sheep rearing. It is another important activity. While cattle are reared mainly in the wet areas of the east, sheep are reared in the dry west. It is because sheep can survive on scanty grasses.
- In Argentina cattle are reared on large pastoral farms spreading over several sq. km. of land.
- These farms are run on the lines of a big factory. There are several departments to look after different aspects such as cattle, fodder crops, machinery, water-supply, transport, etc.
- Cattle are looked after by gauchos, who put them to pasture and round them up. They belong to a mixed race of Europeans and American Indians.
- Great attention is paid to the rearing of best quality beef cattle. Cattle are sent to the ports for export. They are slaughtered and each part is utilized in some way. For eg., bones are turned into fertilizers, hides and fats form other by-products. Meat packing and beef-extracting factories are located at ports.
- In Patagonia and the dry western parts, sheep-rearing is the most important. Sheep provide meat and wool.
- Because of the cool, temperate climate and fertile lowlands, crops are grown on a large scale. In fact, the pampas are the main source of Argentina's wealth.
- Wheat, maize and linseed are the main crops grown in the pampas. Argentina is one of the leading exporters of wheat, maize and linseed oil in the world.
- Barley and oats are grown mainly as rotation crops.
- Besides linseed, sugarcane and cotton are the chief cash crops. Agriculture is one of the most important activities of the people.
- The mineral resources of Argentina are limited. Mineral oil is the most important mineral wealth of Argentina.
- Coal, zinc, chrome, lead and uranium are the other minerals of the country. Uranium is used in the production of atomic energy.
- Most of the industries of Argentina are based on the raw materials obtained from its pastoral farming and agriculture.
- These industries are concentrated in the areas surrounding the city of Buenos Aires.
- The major industrial activities of this area are meat-packing, food processing, flour milling, leather tanning and making of leather goods.
- The region is also known for its cotton and woollen textiles and its sugar mills.
- Argentina now manufactures various machines. It has set up big cement plants and oil refineries. It also now manufactures some chemicals and medicines.
- An average density of about 11 persons per sq. km. About three-fourths of the population lives in cities.
- Buenos Aires is the capital and principal city of Argentina.
- Beef, wheat, maize, linseed and wool are the main exports of Argentina.
- Its chief imports are machinery and vehicles, iron and steel, chemicals, pharmaceuticals, fuel and lubricating oils.
- Being a lowland, transport lines are easily constructed. Argentina leads the countries of South America in the total length of railway line.
- The Trans-Andean railway line between Chile and Argentina passes over some of the highest mountains of the world.
- Most of the railway lines converge on Buenos Aires. It is also the major port of Argentina.

AUSTRALIA

- Australia is the only country in the world that covers the entire continent. It is also known as the 'Island Continent'.
- In area, it is slightly more than twice the size of India.
- The Tropic of Capricorn passes almost through the middle of the continent.
- Australia was discovered by captain James Cook, an English seaman, in 1770. He landed near the site of the present Sydney Harbour. Since it had a favourable climate, he quickly realized that it was possible for his country men to settle in this new land.
- The country is divided into six self-governing states and two centrally administered territories.
- Australia is rich in several resources such as plants, wildlife and minerals.
- But it is deficient in water resources. Nevertheless, Australians have been able to utilize their resources to a great extent with the help of modern scientific methods.
- Australia is, therefore, considered one of the most industrialised countries of the world.

The Land:

(a) The Western Plateau:

- The western part of Australia is a vast plateau. It occupies nearly two thirds of the continent.
- In places, isolated mountain ranges rise above the general level.
- Most of the plateau is a desert or a semi-desert.
- Mostly it is flat and covered with small shrubs.
- The plateau is made up of old rocks similar to the Deccan plateau in India. It is rich in minerals such as gold and iron-ore.

(b) The Central Lowlands:

- In between the Western Plateau and the Eastern Highlands lies an extensive lowland.
- It extends from the Gulf of Carpentaria in the north, across the continent to the southern shores of Australia.
- The average elevation of the region is less than

150 m. At Lake Eyre, it is about 12 m below sea level.

- It consists of a few drainage basins. The Murray and the Darling are the major rivers of Australia flowing through the Central Lowlands.
- They flow through the southern part of the Central Lowland. All the rivers flowing through this lowland are not able to reach the sea.
- Most of them fall into the inland lakes. Thus a great part of the Central Lowland around Lake Eyre is a region of INLAND DRAINAGE.
- Owing to scanty rains much of the lowland is very dry. Fortunately, some water is obtained from the ARTESIAN WELLS. These wells are dug deep into the ground and the water flows out continuously and automatically.

(c) The Eastern Highlands:

- The Eastern Highlands are found nearly parallel to the east coast of Australia.
- They extend from Cape York Peninsula in the north to Tasmania in the south.
- They form a long belt of elevated plateaus and are known as the Great Dividing Range. They are broad and low in the north whereas in the south they are narrow and high.
- Mt. Kosciusko with height of 2,234 m is the highest peak in Australia. Some of the peaks in this part are covered with snow in winter.
- These highlands drop steeply in the east towards the Pacific Ocean and more gently in the west towards the Central Lowlands.
- Most of the rivers of Australia rise in the Eastern Highlands. Those flowing towards the east are short and swift.
- Their valleys form useful routes to the interior. These valleys are used by the rail ways.
- Off the north-east coast of Australia extends a very long ridge-like feature known as the Great Barrier Reef.
- This world famous reef is more than 1,900 km in length and its distance from the coast

varies from 30 to 240 km.

- It has been formed as a result of the deposition of skeletons of corals.
- Corals are fine sea animals that live close to the rocky sea floor in warm, clear, shallow waters in the tropical regions.
- When the corals die their hard skeletons remain fixed in place and new corals grow upon them.
- These large accumulations of skeletons of corals are known as **CORAL REEFS**.

Climate:

- As Australia lies in the Southern Hemisphere, the seasons of Australia are opposite to those of the Northern Hemisphere. For ex, when we have summer in India, it is winter in Australia.
- Most of Australia is dry. The eastern, north-eastern and south-eastern parts of the country come in the way of winds blowing from the sea. These parts receive heavy rainfall.
- The Eastern Highlands act as a great barrier to these rain-bearing winds. The rainfall, therefore, decreases, considerably towards the west.
- Very large parts of central and western Australia have scanty or no rain at all. Thus a hot, desert type of climate is found in the vast interior of Australia.
- The southern coast of Australia enjoys the Mediterranean type of climate.
- The island of Tasmania receives plenty of rain from the winds blowing from the rest through out the year.
- The northern part of Australia receives rains from the monsoon winds in summer.
- These are the winds that change their direction with the change in season. This region is cool and dry in winter and warm and wet in summer.
- The land and climate of Australia have influenced the distribution of various natural resources.

Forests and Grasslands:

- Australia remained isolated from the rest of the world for a very long time. As a result, some of the vegetation and animals of Australia are quite different from those found in other parts of the world.
- Eucalyptus is the most common tree in Australia. They are evergreen trees and are known most commonly as the ‘gum trees’.
- Some of them are very high (more than 90 m), while some are no taller than four or five metres.
- Some of the varieties such as **JARRAH AND KARRI** are valuable for their timber.
- Some eucalyptus trees yield oil.
- Wattle is another common tree. It is tall and bears golden flowers in summer.
- The distribution of natural vegetation is controlled by the amount of rainfall.
- Forests are found near the coast where rainfall is heavy.
- The grasslands and scrublands are found in the drier interior parts.
- Trees like palm, bamboo, birch and cedar grow in the forests of the north-eastern coastal region.
- The forests of Tasmania and the south-eastern and south-western parts of Australia are of the temperate type. They have mainly eucalyptus trees.
- The grasslands of Australia are of two types – tropical and temperate. The tropical grasslands are found in the north. They are called savannahs.
- The temperate grasslands found in the Murray-Darling basin are called **DOWNS**. These grasslands are known as pastoral farming.
- The vegetation of semi-arid regions consists of salt-bush and mulger plants. Cactus and thorny grass plants are found in more arid parts.

Wildlife:

- Many of the animals of Australia are **MARSUPIALS**. These animals have a pouch-like

fold of skin near the stomach in which they can carry their young ones.

- The kangaroo and wallaby are well-known examples of marsupials. The kangaroo lives on grass and leaves. It has become symbolic of Australia.
- Koala is another marsupial of Australia. It resembles a teddy bear because of its flat, black nose. It lives on trees. It feeds on the leaves of the eucalyptus trees. It is active during the night and sleeps during the day.
- Dingo is a wild dog. Platypus is a strange animal. It is an animal-bird that survives under water, walks on the ground and digs tunnels under the ground. It is a four-legged animal that lays eggs like a bird.
- The emu, kookaburra and lyrebird are some of the birds of Australia. The emu is a large-sized bird, which cannot fly, but can run fast like the ostrich of Africa. The kookaburra is called the 'laughing jackass' because of its peculiar laugh-like call. The lyrebird is a very beautiful bird. It is a great mimic. It can imitate the songs of other birds, the bark of a dog, and the toot of a passing car.

Crops:

- Due to inadequate rainfall in most parts, only four per cent of land in Australia is under cultivation.
- Agriculture is carried on in the south-western and south-eastern parts and the eastern coastal areas where water supply is adequate.
- In some parts, where rainfall is not sufficient, farmers have to depend upon irrigation.
- A number of dams have been constructed across its big rivers. Water is diverted to the fields through canals.
- Australia is mainly an agricultural country. The most modern and scientific methods of farming are used here.
- Land is mostly level and farms are of big sizes.
- This favours the use of machinery. Besides, the farmers have to depend on machinery for most of the work, because of the small

population of the country.

- Wheat is the most important food crop of Australia. New South Wales and Western Australia are the main wheat growing states. Wheat is also exported in large quantities.
- Barley, oats and maize are other food crops grown in Australia.
- Rice is cultivated in irrigated areas.
- Sugarcane, tobacco and cotton are important crops grown in Queensland.
- Australia grows a variety of fruits – both tropical and temperate. Pineapple, banana and papaya are grown in the tropical north whereas apples, oranges and grapes are grown in the temperate south.

Sheep Rearing:

- Australia has the largest number of sheep in the world. Sheep are reared mainly for wool. They can survive on scanty grass and even on salt-bush.
- The best sheep lands are the lands between the rivers Murray and Darling.
- Merino is the most important breed of sheep producing the best wool.
- In Australia, sheep are reared on very large farms known as SHEEP STATIONS. They are run by a family with the help of a few labourers known as 'jackaroos'.
- A sheep station is generally spread over several sq. km. It is divided into a number of open grasslands, each having about two to three thousand sheep. They are looked after by a shepherd or two.
- A flock of sheep is driven with the help of dogs from one paddock to another when grass and water become scarce.
- Every sheep station is like a self-contained village. It has all the facilities of modern living. It has windmills to pump water from the well. Besides there are small houses for the workers.
- The shearing season is the busiest season. At this time extra men are employed. Expert teams of shearers go from station to station.

The wool is graded and pressed into bales. These bales are sent to markets for sale. From there they are taken to ports for export. More than 90 per cent wool is exported.

Cattle rearing:

- In Australia, cattle are reared partly for dairy products like milk, cheese and butter and partly for meat. The finest beef-producing cattle are reared on the grasslands of Queensland and the Northern Territory.
- The chief areas of dairy farming are in the east and southeastern parts of Australia. These regions have a temperate climate.
- Rainfall is sufficient for the growth of grasses. Most of the milk is made into butter and cheese in cooperative factories.

Minerals and Industries:

- Australia has considerable mineral wealth. The discovery of gold in the last century brought the first great rush of settlers to this new land. Australia still produces a fairly good amount of gold.
- Australia possesses large reserves of coal, iron-ore, bauxite, manganese and tin.
- It is the largest producer of bauxite in the world. But it ranks fifth in the export because a fairly good amount is used by its own industries.
- Australia produces as well as exports iron-ore, tin and manganese in large quantities.
- It also has some reserves of petroleum and natural gas.
- Australia is one of the important industrialized countries of the world. It produces iron and steel, agricultural machinery, motor vehicles, electrical goods, chemicals, paper, ships, machine tools and refined oil.
- Australia makes several products from its agricultural and animal raw materials.
- They are cotton and woollen textiles, sugar, condensed and powdered milk, butter, cheese, tinned fruits and meat.
- Most of the manufacturing industries are located in Victoria and New South Wales.

People:

- Though Australia is more than twice the size of India, its population is comparatively very small. Its total population is about 16.9 million.
- Its density of population is about 2 persons per sq. km.
- Much of the interior of Australia is very thinly populated.
- It is concentrated mostly in the eastern coastal lowlands and southeastern parts of the continent.
- Nearly 60 per cent of its people live in the eight capital cities.

Trade and Transport:

- The rapid growth of Sydney and Melbourne is related mainly to their importance on trade.
- Australia stands first in the export of wool.
- Its other main exports are wheat, dairy products, beef and mutton, machinery and minerals.
- Its main imports are machinery, transport equipments, textile goods, petroleum and petroleum products.
- Railways are the most important means of transport in Australia.
- The only transcontinental railway running from one end of the continent to the other is the Trans-Australian Railway. It runs between Sydney and Perth.
- Good roads connect all the capital cities and important towns of Australia. The major roads in Australia are called 'commonwealth high ways'. They are like the National Highways in India.
- They run parallel to most of the important rail ways.
- Australia is a continent of great distances. Air transport, therefore, has been of great importance for reaching the distant sheep farms and other farming settlements and scattered towns and cities.

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