CHAPTER 5

RESOURCES

LONG QUESTIONS

Q.1 Enlist factors which contribute to soil formation in Pakistan?

Ans: Soil is the top covering of the earth in which plants grow. It is made up of small rock particles, decayed organic matter and living organisms. Soil has three basic components (i) Solid particles like salt and mineral and organic matter (ii) air and (iii) water. Generally there are three layers of soil. Plants grow in the upper layer of the soil. Changes in the weather take part in the formation of soil. Extreme heat, cold, rain and winds cause physical changes in the earth crust of a particular area and as a result the soil is formed. Such a soil is called the local soil. The soil, which, under the effect of natural agents like water and strong winds, is moved from one place to another, is known as the transferred soil.

The soil transported from one place and deposited at another place by a river is called alluvium. The soil transported by from one place and deposited at another is called Aeolian soil.

In Pakistan the kind of soil varies from place to place. The texture of soil varies according to the size of the rock particles. The soil containing coarse rock particles is called the sandy soil, and that containing fine particles is called clay. The mixture of sand and clay is called loam soil. Thus the soil found in different areas of Pakistan differ in colors, characteristics and physical properties.

Pakistan shall exercise their authority and rights within the limits prescribed by the Holy Quran and Sunnah.

Q.2 Write a detailed note on soils of Pakistan?

Ans: Soil is the material which forms the upper layer of the earth-crust. Soil has three layers, its upper layer supports the plants that grow on earth; it is a great source for the supply of food and nutrients to the human beings, animals and plants.

When natural forces like extreme cold and heat, rain, and wind cause physical changes in the earth crust of a particular area soil is formed; this soil is called *local soil*. Soil of an area carried by natural agents like water and strong winds, and deposited in another area is called *transferred soil*.

Soils found in different areas of Pakistan differ in colors, characteristics and physical properties. Given below is a short survey of the soils found in different areas of Pakistan:

Soils of the Mountainous and Sub-Mountainous Regions: Soils of the highland areas of Pakistan's northern and western regions are classified as mountain or rock soils. These soils are red in colour. Since these soils are strongly calcareous and have a very low organic content, they create arid and semi-arid conditions. Moving further north, position gradually improves due to sub-humid conditions and higher organic content.

Soil found in the mountainous areas of the districts of Rawalpindi, Jhelum, Gujrat and Sialkot falls in the category of rock soils.

In the lowest parts of the valleys lying between mountain and in the interior basins of aird and semi-arid regions, due to excessive evaporation a thick crust of salts is deposited on the soil; hence, strongly saline and barren soil develops. These soils are not suitable for agricultural use.

Soils of the Potwar Plateau: Soils of the Potwar Plateau are classified into three groups:

(a) ***Loess:*** The wind deposited loess is brown in colour. It is very fertile but unfortunately it does not cover extensive areas of the Plateau.

(b) ***Alluvial:*** Alluvial soil covers narrow river valleys and terraces. These are fertile and suitable for farming.

(c) ***Residual:*** This class of brown soil is absolutely unfertile.

Indus Basin Soil: Indus Basin soils can be divided into three main categories:

(a) ***Bangar Soils:*** These soils are calcareous in nature and have a low organic content (humus), but they become very productive and fertile when irrigated and fertilized. In certain areas, they have been affected by water logging and salinity but they are generally reclaimable except at certain points where strong non-porous alkaline patched have developed. Area covered by Bangar soils is very extensive. It includes most of the Punjab, Peshawar, Mardan, bannu and Kachhi plain and greater part of the Sindh plain.

(b) ***Khaddar Soils:*** Khaddar soils are found along the river side. Yearly floods deposit layers of silt and silty clay upon the soil. Since they have a purely recent origin they have a very low humus (organic content) level, but they are generally free from alkaline and other salts. Soils of Multan and Bahawalpur Divisions falls in this category.

Indus Delta Soils: These soils cover the entire area of the Indus Delta from the south of Hyderabad to the coast. Developed under flood water conditions saline loamy soils cover most part of the delta but these soils can be reclaimed for agricultural use by better drainage and simple leaching. With irrigation these soils are being used for cultivation of rice and certain other crops. In the lower part of the Delta near the coastline the soils are extremely saline and barren.

Desert Soils: Cholistan area lies in the south eastern part of the Punjab and extends deep into the province of Sindh. Its Sindh extension is called Thar. This area is covered with sand which is yellowish to pale brown in colour. The soil is calcareous and rich in minerals. For agricultural use the soil is weakly developed and very poor in organic content.

Thal area lies between the Indus and Jhelum rivers in the Province of Punjab. This is river terrace, covered with a comparatively thin layer of grey sands.

Desert soils are rich in lime, potash, phosphate and iron content. These soils contain a medium level of organic content and can be made cultivable after proper irrigation and manure.

Kharan Desert occupies a large area of western Balochistan. Vegetation is absent; the soil is not suitable for cultivation.

The soil of the south western area of Balochistan Plateau is called *loess*. It is red in colour and suitable for agricultural use.

Q.3 What is the importance of forests? Enumerate and discuss major kinds of forests in Pakistan?

Ans: Importance of Forests

Forests are considered the national resources of a country. According to the experts, forests should cover 25% of the total area of country for its economy. In Pakistan only 4.8 percent of the total area is covered by vegetation. Following are some of the uses of forests.

i. Forests help agriculture by keeping soil intact and protecting it from being washed away.
ii. Forests provide timber which is used for building houses and making carriages, furniture etc.
iii. Wood-pulp provided by forests is used for the manufacture of paper.
iv. Forests provide raw material for several industries such as match boxes, sport goods, rubber industry, silk industry, resin, refining industry, agricultural implements etc.
v. Forests are helpful in making pharmaceuticals, gums, resin, rubber quinine, corks, rayon and many other useful materials.
vi. Trees protect the soil from being blown away by winds.
vii. Forests supply various oils, e.g. sandalwood oil, turpentine oil etc.
viii. Forests present natural scenery and charming places for tourists.
ix. Forests cool the air and cause rainfall. It is because of forests that Murree hills receive heavy rainfall. They also keep the environment pleasant by getting the moisture from earth through their roots and spreading it in the air through leaves.
x. It is only forests which can fight the increasing greenhouse effect which is a threat to all sorts of life on earth.
xi. The decomposed leaves of trees form humus which is the biggest source of fertility for land.
xii. The thick undergrowth in forests checks the rain water and allows it to flow slowly. That is why the rivers passing through forests flow throughout the years. They neither dry up during the dry season nor do cause floods in rainy season.
xiii. Forests provide a source of livelihood to woodcutters, craftsman, porters, boatmen, carpenters etc.
xiv. Forests are the abode of wild and forbearing animals which are the wealth of a country.
xv. Forests provide us with honey, wild fruit and dates. Some forest provide herbs which are used as medicines. Forests also provide fodder for animals.
xvi. Forests protect people and crops from strong winds. The winds slow down while passing through forests.
xvii. Forests cause gradual decrease in water logging and salinity thus helping with the increase in fertility. They also help keep the land fertile.

Kinds of Forests

Since the climate and surface of Pakistan vary in different regions, there are various kinds of forests found in the country.

These may be divided into the following five categories

i. North and North-Western Mountains Forests

ii. Sub Mountainous Forests

iii. Western dry Mountainous Dry Forests

iv. Scrub Forests

v. Artificial Forests

1. North and North-Western Mountainous Forests

These forests are found in the northern and north-western mountainous region including Murree, Abbottabad, Mansahra, Chitral, Swat and Dir. The rainfall is good and well distributed in this region. Here we find evergreen coniferous tress such as deodar, firs, blue pine, spruce and chalgoza. Decedoins and broad leaved trees such as Chestnuts, Pine, walnut and oak are also found. These trees yield high quality timber used in the construction of buildings. On lower heights we come across the forests of cherry. Imaltas popular, sumbal and other broad leaved trees. Transportation of wood from these forests to the plains below is very difficult and costly. The logs of trees are floated down the rivers.

2. Sub mountainous Forests

These forests grow below the height of 1000 meters from sea-level in the foot hills. These forests consist of phulahi. Kahu, jaud, acacia, wild olive and black berry. In these areas you can also grow willow, popular, sheeshum, eucalyptus, teak and other trees of sub mountainous areas. These forests are found in the districts of Peshawar, Mardan, Kohat, Attock, Rawalpindi, Jhelum and Gujrat.

3. Western Dry Hills Forests

This region includes Quetta and Kalat Divisions of the Balochistan Province. Here the climate is arid and dry due to scanty rain fall. These forests grow at the height of about 900 to 1000 meters from sea-level. Only small thorny bushes and stunted trees grow in these forests. In Quetta region, however, chalghoza, mazoo and juniper (an evergreen bush) grow at high altitudes. Popular, mulberry and dhrek trees are found in the districts of Dera Ghazi Khan and Dera Ismail Khan.

4. Scrub Forests

These forests include small trees and thorny bushes grown in the plain areas where rainfall is scanty and climate is hot. In Pakistan scrub forests are found in Sukkur, Kotri and Guddu. Scrub forests are also found in NWFP and the plateaus of Balochistan and Potwar. Sheep and goats can be raised on these scrubs. The importan trees of the scrub forests are mulberry, sumbal, dhrek and eucalyptus.

5. **Artificial Forests**

Artificial forests have been planted by the Forest Department. These forests can be divided into the following categories.

i. **Riverside Forests**

These forests have been planted along the great rivers and are called belas. The common trees found in these forests are sheeshum, jund, farrash and acacia (keekar).

ii. **Canal Forests**

Canal forests have been planted along the canals where plenty of water is available. Most important canal forests are located at Changa Manga, Chichawatni, Khanewal, Burewala, Thal, Shorkot, Bahwalpur, Sukkur, Taunsa, Guddu and Kotri. The common trees found in these forests are sheeshum, sumbal, dhrek and mulberry these have also been planted along roads and rail-tracks.

iii. **Coastal Forests**

Along the sea-coast from Karachi to Kutch are found mangrove type forests.

Mangroves are tropical trees which grow in swamps and send roots down from their branches. These forests cover an area of 3000 hectares. Here coconut and grasses grow on salt water. Coco is eaten and its oil is extracted. Its wood is used as fuel and fibre is stuffed in cushions. Grasses are used as fodder.

Q.4 Enumerate agricultural problem and the efforts made for their solution? **(2012)**

Ans: Agricultural Problems

Pakistan, with its fertile plains is basically an agricultural country, but the agricultural produce per acre is not satisfactory for the following reasons.

1. **Water logging and salinity**

Sometimes underground water level rises up so that the surface of the ground is flooded with water. This is known as water logging which is a serious soil disease. Water logging makes the land unproductive because the plants cannot get food properly from the soil and they begin to wither. The subsoil salts dissolved in this water are accumulated on the surface of ground. This is known as salinity. Salinity also makes the land unsuitable for agriculture use. According to an estimate about 100,000 hectors of land in Punjab and Sindh Provinces becomes useless as a result of water logging and salinity.

2. **Shortage of water**

Most of our land is barren and depends on rains. The quantity of water in our rivers also depends on annual rainfall. With the increase in population our agricultural needs have also increased. But unfortunately the water storage capacity in our dames has not increased accordingly. This capacity has rather decreased due to the silting of dams. There is also a need to build new dams. The subsoil water level in many areas is very low and it is very difficult to draw the underground water. A large amount of the water of our rivers is thrown into the sea due to the bad water management.

3. **Floods**
Floods have become very common in our country. Floods destroy our crops and cause erosion of fertile surface soil rendering it uncultivable. According to an estimate the land erosion caused by floods has already made out agricultural land useless

4. **Under utilization of Cultivable Land.**
79.61 million hectares of cultivable land of which only 20.43 million hectares are being cultivated. It means that about 75 percent of our agriculture land is not being utilized.

5. **Insufficient Means of Transport**
Due to the inadequate and.substandard means of transport our agricultural products do not reach the market in time and in good condition. Good transport facilities are also needed to ensure timely supply of seeds and fertilizers. To the farmers, there is a also a shortage of godowns to preserve the agricultural produce from diverse climate conditions. These factors discourage all cultivators to take interest in promoting agricultural activities.

6. **Ignorance**
A highly specialized and advanced knowledge is required to adopt the modern techniques in the field of agriculture. Unfortunately our farmers are generally illiterate and ignorant and they depend on conventional methods. So they cannot make the best use of their land.

7. **Poverty**
Most of our farmers are poor and they cannot afford to purchase high quality seed, fertilizers, insecticides etc. for their crops.

8. **Small Agricultural Units**
In Pakistan most of the farmers possess small pieces of land. So their income is insufficient, and they are unable to employ mechanized farming techniques. Moreover the ever-increasing population is causing increase in the number of farmers whereas the cultivated area is not increasing. As a result the per capita cultivated area is reducing with the passage of time.

Efforts for Solution

Since independence the Government of Pakistan has made efforts to solve the agricultural problems of Pakistan. These efforts can be discussed under two heads.

i. Land reforms and **ii. Other efforts**

i. **Land Reforms**
In order to improve the agricultural sector the Federal Government of Pakistan introduced land reforms in the years 1954, 1958, 1972 and 1997. The objectives of these reforms were as follows:

- To enhance agricultural produce.
- To increase job opportunities especially in the rural areas.
- To improve tenant- landlord relationship.
- To make an equitable distribution of wealth generated by the agricultural sector.

In 1972 the land holding was fixed at 150 acres irrigated and 300 acres barani. The land exceeding this limit was allotted to the landless tenants at nominal prices payable at easy installments. Small holding were exempted from land revenue and water rate.,

Other Efforts

ii.

- A programme 'SCARP' was launched for the control of water logging and salinity and reclamation of the effected land. Thousands of tube-wells were installed and extensive drainage channel were dug under this programme.
- The Government established flood warning and control centers built embankments and planted trees. Thus at least 4 million acres were protected from floods.
- Various measures were adopted for plant protection. These measures included aerial and ground spray, regular vigilance surveys for control of locust in the desert areas and many other services.
- The Government allowed agricultural subsidy to the farmers on electricity, tractor and other agricultural implements, fertilizers etc.
- In the government research farms quality seeds were developed and provided to the farmers on a subsidized rates.
- Basic agricultural information was made available through mass media to the farmers.
- To ensure reasonable price of the yield for farmers, the government made arrangements for the procurement of major crops. For this purpose Pakistan Agricultural Storage Services Corporation (PASCCO) was set up in 1973.
- Agricultural Development bank of Pakistan (ADBP) was set up to advance low mark up loans to the farmers for the purchase of seeds, fertilizers, pesticides, tractors, tube-wells etc.
- Arrangements for the training of farmers were made to enable the farmers to adopt mechanized farming for improving land productivity.
- After independence canals were improved and enlarged, and many dames, barrages and head works were built.

Tube-wells were installed in Thar area

Q.5 Give a detailed account of the important Kharif and Rabi Crops, Seasonal Crops. **(2011)**

Ans: In Pakistan there are two main cropping seasons, Kharif (Summer) and Rabi (winter). The crops grown in these two seasons Kharif and Rabi and called Kharif crops and Rabi crops respectively.

Important Kharif Crops

Kharif crops are sown late in spring or early in summer, *i.e.* in the months of April, May and June, and reaped in the months of October and November. Kharif crops need high temperature and large quantity of water. Following are the important Kharif crop.

i. **Rice**

Rice is cultivated in an area of 2515 thousand hectares which forms 10 percent of the total cultivated area. The annual produce of rice ranges from 4000 to 5000 tones. It is an important food and cash crop. It is consumed domestically as well as exported in large quantities to other countries. Pakistan grows some of the best known varieties of rice in the world. It needs hot and moist climate for its cultivation. It is grown in all the cultivated areas of the Punjab and Sindh provinces. In the northern mountainous region it is grown on terraced land.

ii. **Cotton**

Cotton is an important cash crop and Pakistan earns handsome foreign exchange by the export of cotton. It is also known as silver fiber. Cotton needs warm moist climate and rich black soil to grow. Thus it is the crop of sub-tropical and temperate zones. During 1999-2000, it was cultivated on an area of 2983 thousand hectares. The plain irrigated areas are best suited for its cultivation. In Punjab it is chiefly cultivated in the districts of Multan, Vehari, Sahiwal and Okara. In Sindh it is grown in the districts of Nawabshah, Hyderabad, Therparker and Sangar.

iii. **Sugar-cane**

Sugar-cane needs high temperature, plenty of water and the soil rich in lime content. In Pakistan sugar-cane is grown in the well-irrigated areas of Punjab, Sindh and NWFP. It is used for making sugar and gur. During 2000-2001 it was cultivated in an area of 1010 thousand hectares, and its production was estimated at 46363 thousand tons.

iv. **Maize**

Maize is used as human food and animal fodder. In our hilly areas it is used as a staple food. The edible oil known as corn oil is extracted from maize. It needs warm and moist climate and good supply of water for its cultivation. In Pakistan two maize crops are grown depending on the climate of the area. One crop of maize is cultivated in spring and the other in the months of July and August. Maize is cultivated in vast canal irrigated areas of Punjab, Sindh and NWFP. Good quality sweet maize is also cultivated in the hilly areas of Haripur hazara and Azad Kashmir. The average yield maize is estimated at about 1400 thousand tons per year.

v. **Millets (Jawar and Bajra)**

Millets are the crops of barani areas. They are chiefly grown in the rain-irrigated areas of Dera Ghazi Khan. Tharparker, Sangarh and Hyderabad districts. The annual yield of Bajra is estimated at about 150 thousand tons and of Jawar at about 225 thousand tons per annum.

vi. **Tobacco**

It is an important cash crop of Pakistan. In Pakistan nearly 95 percent of the total tobacco growing area lies in NWFP and Punjab, Mardan district covers about 44 percent of the total tobacco produce in the country. Peshawar contributes 10 percent to the national tobacco produce. Punjab produces 25 percent of the total tobacco grown in the country.

Important Rabi Crops

Rabi crops are sown in the beginning of winter, *i.e.* in the months of October and November and harvested in the beginning of summer. *i.e.* in the months of April and May. Rabi crops do not need much heat and moist of grow. Following are the important Rabi crops cultivated in Pakistan.

i. **Wheat**

Being a staple food of the local people wheat is the most important Rabi crop cultivate in Pakistan. It grains found in the excavations of Harappa and Moenjodaro show that the cultivation of wheat has been carried out in Pakistan since olden days. It is sown in early winter and harvested in April and May. Canal-irrigated areas are best suited for the cultivation of wheat. It is, however also grown in small quantities in the barani areas of Potwar plateau. Wheat was cultivated on 8575 hectares of areas during the year 2000-2001, the wheat produce amounted to 19.3 million tons, which was a record produce.

ii. **Barley**

Compared to wheat, barley can be cultivated on less fertile land with climate conditions of higher temperature and uncertain rainfall fluctuations. Barley is used as human food and animal fodder. Its produce was estimated at 132 thousand tons during the year 1999-2000.

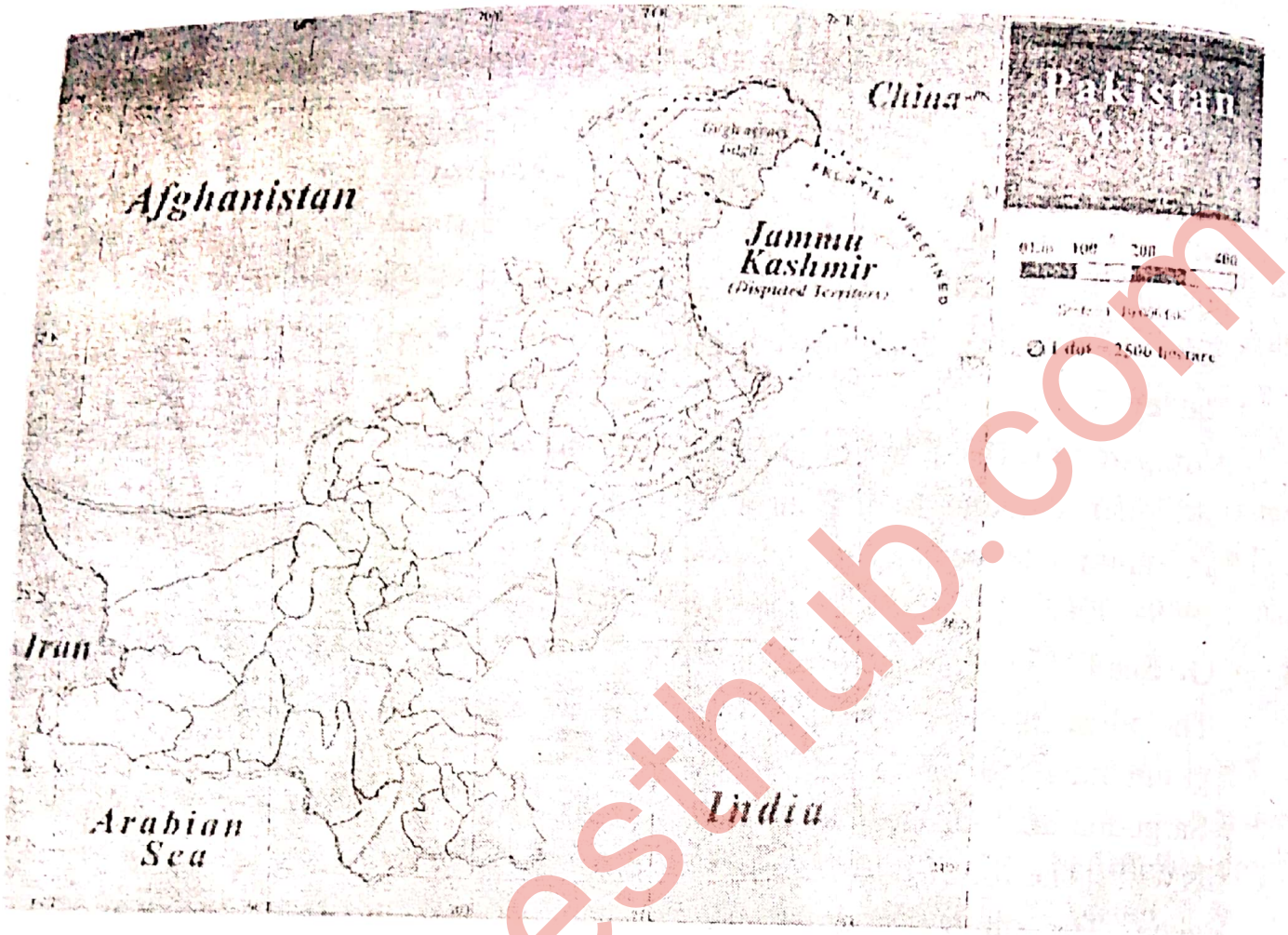
iii. **Oil Seeds**

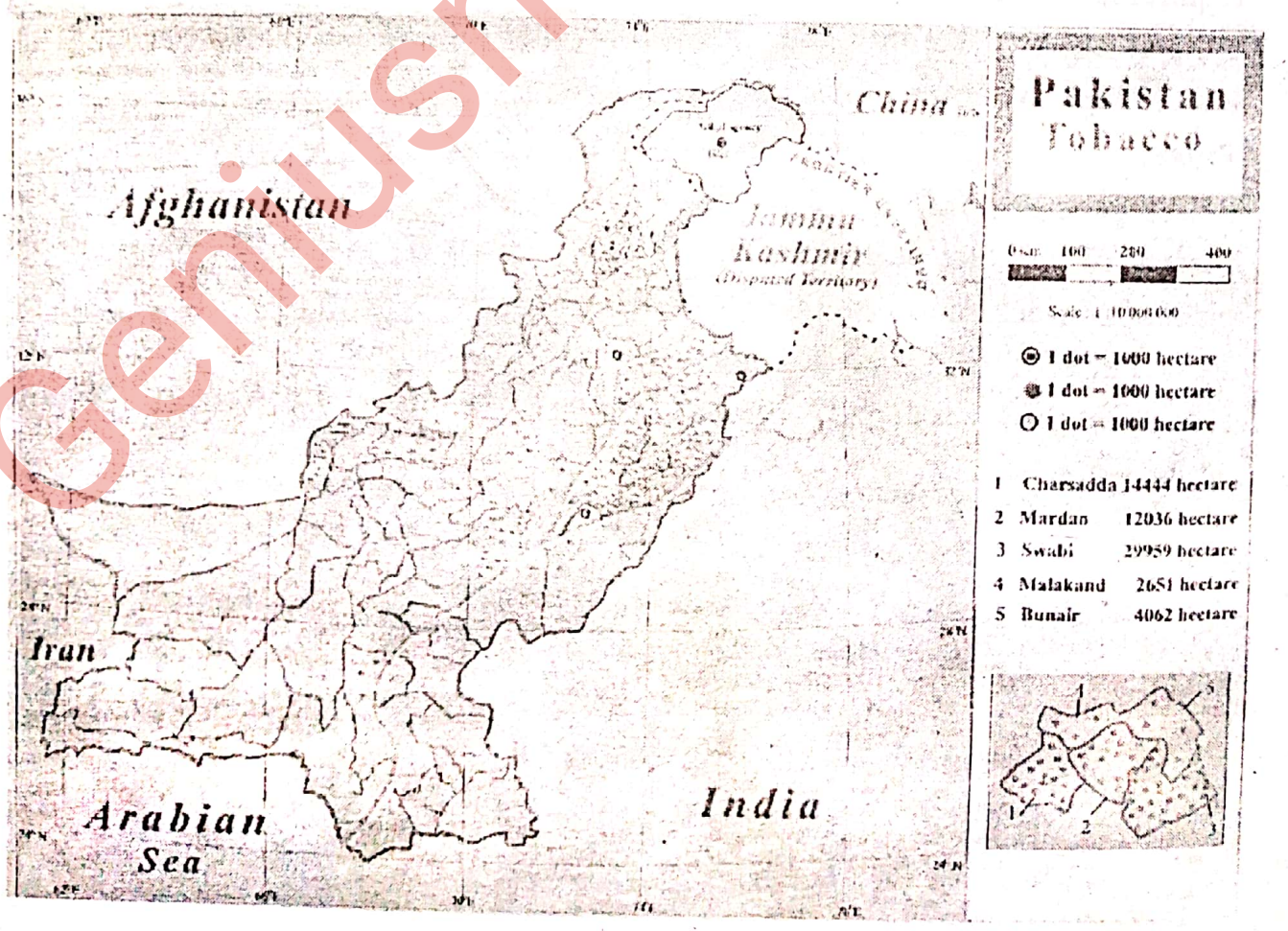
The oil seeds commonly used in Pakistan are cotton seeds, soyabeans, mustard , sesame, groundnuts and sunflower. These are cultivated in the districts of Multan, Bahawalpur, Sargodha and Faislabad in Punjab. Khairpur and Hyderabad in Sindh and Peshawar in NWFP. The oil of these seeds is used for cooking and frying eatables and for making ghee. The oil seeds grown in Pakistan are not sufficient to meet our domestic requirements. In 2000-2001, we produced only 0.6 million tons of edible oil against our requirement of 1.9 million tons. We had to import the remaining quantity, *i.e.* 1.3 million ton grown in other countries.

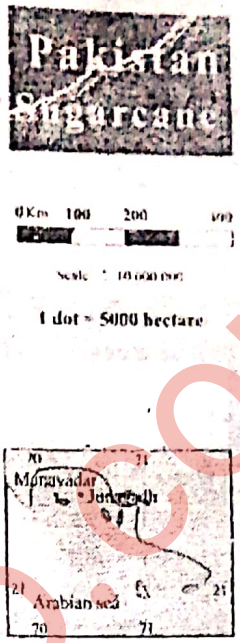
iv. **Pulses**

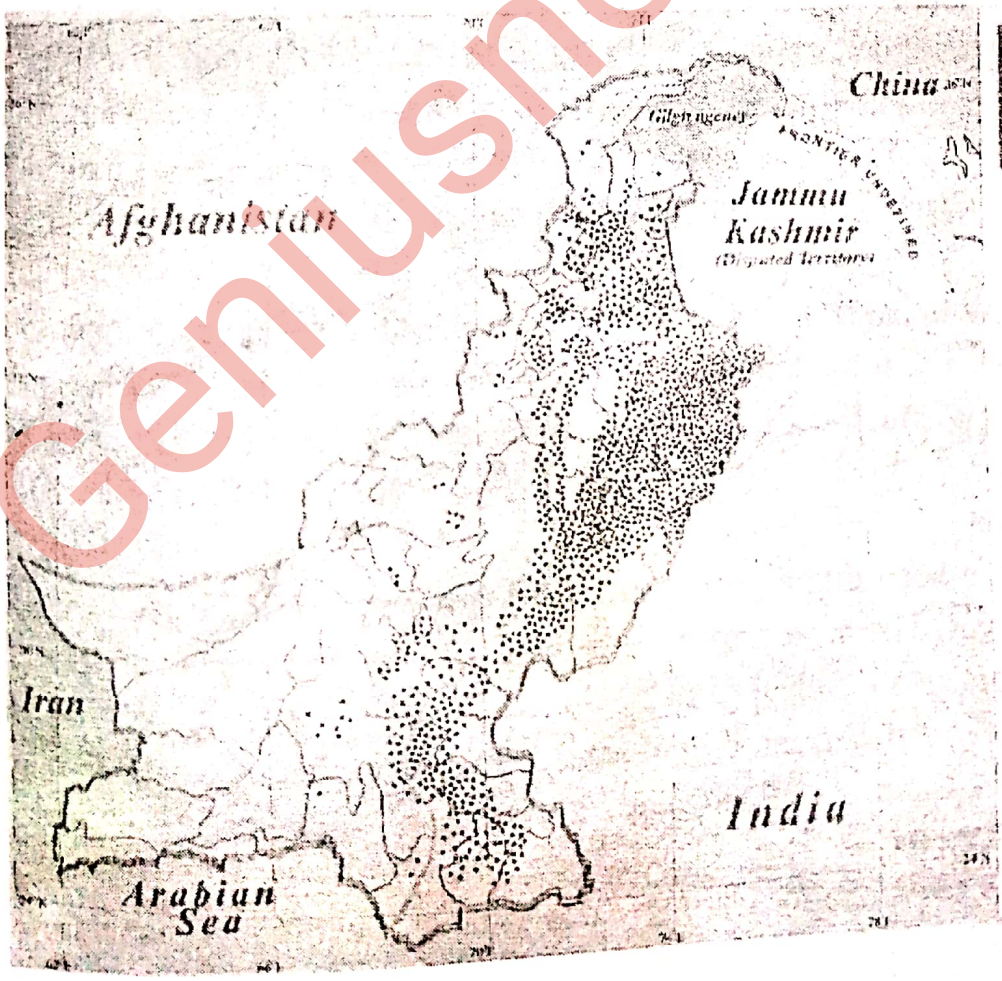
Pulses generally fall in the category of Rabi crops. The gram crop occupies about 70 percent of the total pulse growing area in Pakistan. Moong is grown on 10 percent and each of Masoor and mash on 4 percent of the area under the cultivation of pulses. of the total pulse growing area Punjab and Sindh occupies 75 percent ad 18 percent respectively. Pulses are a rich source of protein and are an important part of the daily diet of Pakistan.

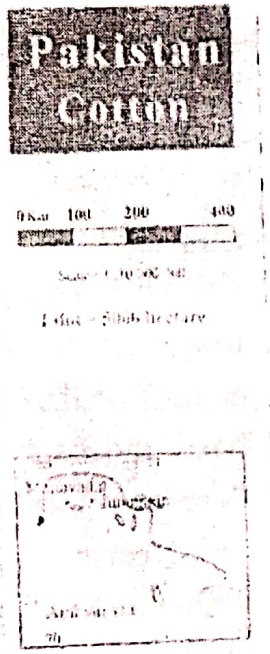
Important Agricultural Maps

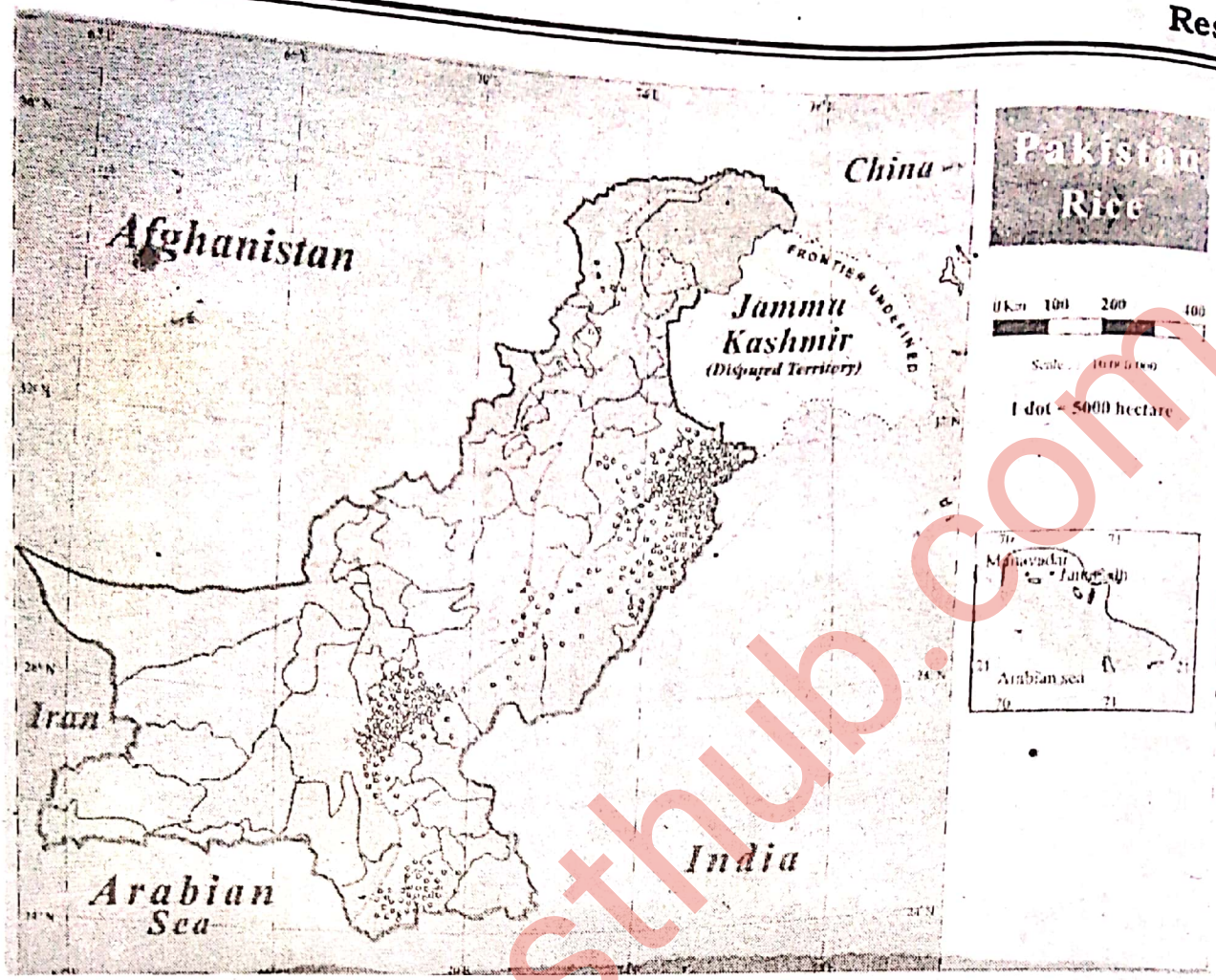












Q.6 Describe various methods applied for irrigation in Pakistan Methods/Means of Irrigation in Pakistan?

Ans: Pakistan is an agricultural country. With the exception of the northern hilly areas and plains where rainfall is sufficient, agriculture depends on irrigation. The irrigated area includes nearly 70% of the land under cultivation. The chief means of irrigation used in Pakistan are canals, wells, tube-well, tanks and aqueducts (karez).

1. Canals

The canal network in Pakistan is considered to be one of the best irrigation systems in the world. Canals are the most important and popular means of irrigation as they feed 70 percent of the area which depends on irrigation. Pakistan gas the following three main types of canals.

i. Perennial Canals

These canals have been dug after construction barrages across the rivers. So they flow throughout the year. The most important perennial canals in Pakistan are the Upper Bari Doab, Lower Bari Doab, Sidnai Canals, Upper Chenab, Lower Chenab, Upper Jhelum, Lower Jhelum originating from Trimu headworks and canals originating from the river Sutlej at Ferozpur, Islam, Suleimanki and Panjnad Headworks.

ii. Non-Perennial Canals

These canals flow only in rainy season. In this category fall Sidhnai canals from the Ravi, Haveli canals from the Chanab and some of the Sutlej canals.

iii. **Inundation Canals**

These canals flow only in the rainy season when the water level is high in rivers. These canals supply uncertain quantity of water. A number of old canals from the Indus & Chenab are inundation canals.

2. **Wells**

In the plains of Pakistan where the underground water level is not very deep, the water is drawn through Persian wheels from the wells. This is a very old method of drawing water from the earth. Through this method a very limited area under cultivation can be irrigated.

3. **Tube-wells**

The regions where the subsoil water is considerably deep, it is drawn through electric or diesel engines called tube-wells. The Government extends loans to the cultivations for the purchase of tube-wells on easy instalments every year.

The Government has installed a good number of tube-wells for the eradiction of waterlogging and salinity. Through these tube-wells the water in large quantity is drawn from the earth to let it flow into the canals. Thus the underground water level is lowered with the result that the waterlogging is considerably reduced or completely eradicated.

4. **Aqueducts/Karez**

In Balochistan where rainfall is scantly, underground canals have been dug in form of tunnels. Such canals are called aqueducts or karez. The water or karez irrigates the dry land of the region.

Q.7 Discuss in detail the Indus Water Treaty?

Ans: The Indus Water Treaty

After partition in 1947, India got control over the headwork constructed at Madhopur on the river Ravi and that constructed at Ferozepur on the river Sutlej. On 1st April 1948. India cut off the supplies in every canal that flowed from India to Pakistan. This started a dispute between India and Pakistan on the division of the Indus system water. It was a very serious matter because the agricultural economy of West Pakistan depended on the water of this system. This problem was solved with the mediation of the World Bank. After long negotiations the Indus Water Treaty was signed between Pakistan and India in September 1960.

According to the treaty the waters of three western rivers, *i.e.* the Jhelum, Chenab and Indus were to be used by Pakistan. Similarly the waters of the three eastern rivers, *i.e.* Sutlej, Bias and Ravi, were to be used by India. In order to meet shortage of water an extensive irrigation project was worked out. Under this project new barrages and dams and a number of link canals were constructed to irrigate the area previously irrigated by the eastern rivers. Old water channels were also improved. The projects of Mangla Dam and Tarbela Dam were a part of the Indus Water Treaty. These dams serve as huge water reservoirs for generating electricity.

Tarbela Dam has been constructed on the river Indus 47 km. Upstream from Attock. The reservoir is 40 km. long and the storage capacity of the lake is 11.1 million acre feet. In

winter the Jinnah, Chashma, Taunsa, Guddu, Sukkur and Kotri barrages run short of water. The Tarbela Dam supply water to these barrages.

Mangla Dam is the first large earth filled dam which is located on the river Jhelum. The storage capacity of the dam is 5.5 million-acre feet. Mangla Dam supplies water to the canals which have been constructed to irrigate Chaj and Bari Doabs.

Q.8 Describe various link canals constructed under the Indus Water Treaty.

Ans: Link Canals

Link Canals can also be named as supplementary canals which have been dug to store rain water. In case a perennial canal or an inundation canal runs short of water, the deficiency is made up by the link canals. Most of the link canals were constructed under the Indus Water Treaty. These link canals are as follows.

1. **Rasul-Qadirabad Link canal**
   It carries water from the Rasul Barrahe, constructed on the river Jhelum, to Chenab.
2. **Qadirabad-Balloki Link Canal**
   This is an extension of the Rasul-Qadirabad Link Canal and carries its water to the river Ravi.
3. **Balloki-Sulaimanki Link Canal**
   It connects the Ravi and the Sutlej.
4. **Trimu-Sidhnai Link Canal**
   It carries water from the Trimuy headwork and let it flow into the Ravi.
5. **Sidhnai-Malsi**
   It takes the same water into the river Sutlej.
6. **Mailsi-Bahawal Link Canal**
   It supplies water to the Bahawal canal.
7. **Chashma-Jhelum Linl Canal**
   It takes water from the Chashma Barrage, built on the river Indus, to the river Jhelum.
8. **Taunsa-Panjnad Link Canal**
   It carries water from Taunsa built on the river Indus, to the river Chenab. This water is used to feed the Punjnad Canals.

The total length of the link canals is about 800 km. and they have the storage capacity of about 100,000 causes. These canals transfer the water of three western rivers, the Indus, Jhelum and Chenab to the eastern rivers *i.e.* the Ravi and Sutlej which run short of water as their water has been allotted to India under the Indus Water Treaty.

Q.9 What is livestock? Discuss different ways through which livestock affect human life.

Ans: Livestock

The animals that are kept on a farm for use or profit are called livestock. Livestock generally include cattle, sheep, goats, camels, donkeys etc. Broadly speaking fish and poultry may also be included in. livestock. Animals are an important part of our agricultural economy. They form 36 percent of our agricultural sector. Livestock share in 9 percent of the total GNP of the country.

How Livestock Affect Human life

In Pakistan livestock influences the human life in the following ways:

i. The agriculture is not fully developed and mechanized in our country. The traditional agricultural pattern still prevails. The animals are helpful in farming. Bullocks are used to plough the fields, level the land thrash the crops and turn the Persian wheels.

ii. In many parts of the country where roads have not been built, the carts driven by bullock, donkeys and camels are used as a means of transportation.

iii. The animals such as cows, buffaloes, goats and sheep provide us with milk, butter, yogurt and ghee.

iv. Meat is an important part of our food. Oxen, goats, sheep and buffaloes are slaughtered for meat.

v. Sheep provide us with wool, which is used for making warm clothes.

vi. From animals we obtain hides and skins which are made into leather. We consume leather domestically and export it in large quantities to earn foreign exchange.

vii. The dung of animals is used as manure and as fuel for cooking food.

Q.10 Write a note on cattle and cattle farms in Pakistan.

Ans: Cattle and cattle Farms in Pakistan

In Pakistan cattle farming is not as common and independent occupation as it is in many other countries like Australia, New Zealand, Canada and many other countries of the world. In our country farmers generally keep a few cows and buffaloes on their farms. They consume a part of the milk in their homes and sell the rest of it. Under a Common Wealth aid program a big dairy farm has been established at Rakh Ghulaman in Thal. Military dairy farms have established at Lahore, Rawalpindi, Okara, Peshawar, Malir (Karachi) and some other places.

Sheep and goats

Goats and sheep are reared in cultivated areas as well as in the dry parts of the country like Thar, Thal, Balochistan Platueau and Potwar. Good breeds of sheep and the famous fat-tailed sheep are also reared in the north-western mountainous region where the climate is extremely cold. There are sheep farms at Jabba (Hazara) and in Kaghan Valley, too. The government sheep farms have been established at Jhempir (Thatta) and Okara. There are also many private farms where sheep are reared in large numbers. In Pakistan a sheep generally yields about two kg. of wool in a year, but good quality wool is not produced in our country. However Birkuk or Harnan produce wool which meets the international standards.

In Pakistan millions of goats are bred and reared for their skins and meat. There are varieties of goats reared in the Kaghan Valley.

The hair produced by these goats is called Pashmina which is used for making shawls and cloth sheets

Q.11 Describe mineral oil resources and the most important oil outlets in Pakistan.

Ans: Mineral Oil

Mineral oil is the most important mineral in the modern age of industrial progress. It is used not only to run heavy machinery in factories but also to run trains, aero planes and other means of transport such as buses, trucks, cars etc. In the field of agriculture we need oil for tube-wells, tractors and thrashers. Kerosene, a byproduct of petroleum, is used as fuel for cooking food.

In Pakistan the annual production of mineral oil is 20.6 million barrels which meets only 45 percent of our domestic requirements. We have, therefore, to spend a lot of foreign exchange to import oil from foreign countries.

In Pakistan the main oil areas so far discovered are the Potwar Plateau and the Lower Sindh. The main oil outlets (each along with the year of its discovery) of the Potwar Plateau are Khaur(1915). Dhullian (1935), Joyo Mair (1944). Balkassar (1946). Kasal(shortly after independene), Toot/Dharnal (1968). Kot Sarang (1968). Meyal (1968) and Fimkassar (1983-84). In the lower Sindh the main oil fields or outlets are Khaskheli (1982-83), Aghari (1983) and Tando Allah yar (1984). According to experts there are reasonable oil reserves in the marine belt surrounding Pakistan. The oil exploration has therefore been taken up in the sea near Karachi.

Q.12 Write a note on oil refineries in Pakistan.

Ans: Oil Refineries in Pakistan

The mineral oil obtained form oil fields are in crude form. It has to be refined before it is used. After refining it turns into diesel, heating oil, furnace oil, Kerosene and petrol. Oil fields are generally established near oil fields. At present there are four oil refineries working in Pakistan.

Attock Oil Refinery

This is the oldest oil refinery which has been established at Morgah near Rawalpindi. The crude oil obtained from Attock. Jhelum and Chakwal districts are refined in this refinery. Thus it refines ten percent of the total oil refined in Pakistan.

i. Pakistan Refinery set up at Karachi.
ii. National Refinery set up at Karachi.
iii. Pak Arab Refinery set up at Karachi.

The crude oil imported from Iran, the Persian Gulf states, Saudi Arabia and Romania is refined in the above last refineries established at Karachi.

Q.13 What do you know about natural gas? Write a note on Compressed Natural Gas.

Ans: Natural Gas

After mineral oil, natural gas is the largest source of energy. Gas exists in the oil bearing rocks above the oil surface. About 30 percent of our energy requirements are fulfilled by natural gas. In Pakistan the reserves of natural gas are found in much more quantity than those of crude oil. Its deposits were first discovered by Pakistan Petroleum Limited at Sui in Sibi district of Balochistan in the year 1952. It is for this reason that it is commonly called Sui gas.

So far Sui has the largest gas field in Pakistan. Since then 25 more gas reserves have been discovered of them 6 are located in Balochistan, 10 in Sindh and 9 are found in Punjab. In Sindh the most important gas fields have been discovered at Sari-Hundi, Golarchi, Khaskheli and Laghari. The known natural reserves of gas in Pakistan can meet our needs for a very long time.

Uses of Natural Gas

Natural gas is a great gift of God. It is commonly used as fuel for domestic purposes. It is used as industrial fuel in factories. It is also used as raw material for making fertilizers. It is used as transport fuel (CNG) to run vehicles.

Network of Natural Gas

A 555 kilometers long pipeline was laid from Sui to Karachi. It was then extended to Multan covering another distance of 347 kilometers. There from it was taken to Lahore, Gujranwala, Faisalabad, Gujjrat, Rawalpindi and Islamabad. The gas pippline has now been extended to many parts of the country.

Compressed Natural Gas (NG)

Natural gas filled in compressed form in specially designed cylinders is called compressed natural gas (CNG). CNG, being a relatively cheaper fuel, is rapidly becoming popular as an alternative to petrol.

Q.14 Write a note on electricity. Describe the main source of electricity in Pakistan.

Ans: Electricity

Electricity is a form of energy which plays an important role in the industrial and economic development of a country. We have power resources in Pakistan, but these resources have not been fully exploited.

Pakistan produced 68.8 MW (Megawatt of electricity). A megawatt is equal to a million watts. We had to import electricity from India to meet our power requirements. In 1952 the Rasul Power Plant was commissioned. By 1972 Pakistan was able to generate 1862 MW of electricity. Now we produce more than 6700 MW but it is still not enough to fulfill our requirements.

The distribution of electricity is managed through a national gird. Thus a lot of power is lost while covering a long distance. Almost all the towns and cities of our country have been electrified, but still more than 50 percent of our villages do not have electricity.

Main Sources of Electricity

There are three main sources to generate electricity.

i. Hydro power stations which generate hydroelectricity.
ii. Thermal power stations which generate thermal electricity.
iii. Nuclear power plants which generate nuclear power electricity.

1. Hydroelectricity

The electricity produced by hydro power stations meets 53% of our electricity requirements. This type of electricity is produced by a fast flowing water stream. A great volume of water in the upper part of a river is used to turn a turbine which generates electric power.

In 1947 Pakistan had two hydroelectric power plants Renala and Malakand. Now we have built a number of such plants. According to WAPDA hydroelectric power potential of Pakistan is 30,000 MW. In Pakistan the main hydroelectric power projects are:

i. Tarbela on the river Indus.
ii. Mangla on the river Jhelum in Jhelum district.

iii. Warsak on the river Kabul at the distance of 20 miles from Peshawar.

The most important among the newly built hydroelectric power projects in Pakistan are,

i. Chashma Low head hydro Project (District Mianwali).

ii. Ghazi Brotha hydroelectric Power Project which is expected to complete in 2003. It will have 1450 MW capacity.

2. Thermal Electricity

Thermal electricity is generated by burning oil, gas or coal. In Karachi there are six thermal power plants of which the largest two ones are located at Pipri and Korangi. These six plants at Karachi generate more than 43% of the total thermal energy in Pakistan. In Sindh other thermal power plants have been set up at Kotri, Hyderabad, Sukkur and Guddu. In Punjab the thermal power plants are located at Faisalabad, Multan, Lahore and Rawalpindi. In Balochistan a thermal power plant is located at Quetta. Compared to the hydroelectric plants, the thermal power plants have made slightly less contribution to the production of electricity. Under the 8th Five Year Plan coal will be used to generate an additional 5000 MW of thermal electricity.

3. Nuclear Power

Pakistan is one of the few countries which have the nuclear power plants to generate electricity. There are two nuclear power electricity generation plants in Pakistan. Karachi Nuclear Power Plant (KANUP) was installed with Canadian collaboration in 1971. Another Nuclear Power Plant has been established at Chashma (Mianwali district) with the collaboration of the Peoples Republic of China. KANUP has a gross capacity of 137 MW. While Chashma Nuclear Power Plant (CHASNUP) is designed to generate 300 MW. Pakistan Atomic Energy Commission (PEAC) is responsible for the development of nuclear power.

The different types of electricity we have in Pakistan fulfill our national electric power requirements with the ratios given below:

i. Hydroelectricity	53%
ii. Thermal Electricity	43%
iii. Nuclear Electricity	2%

4. Solar energy

Solar energy is the cheapest source of energy. Its source is Sun. We have a lot of sun shine & our shortest days are 9 hours long. These conditions make it possible for us to develop solar energy. The 1st solar photo static system as set up in Dec 1981. Government has been making efforts now this regard.

Q.15 Write a note on the solar energy.

Ans: Solar Energy

The Solar energy has its source in the sun. Pakistan has an excellent potential for solar energy. Pakistan is located near the tropic of Cancer, so during most part of the year the sun rays fall in vertical position. We have a lot of sunshine and our shortest days are 9 hours position. We have long summers. These conditions have made it possible for us to develop a very good solar energy network. We can use this source of energy to the maximum in every walk of life. Solar energy can also prove very important for the development of our agriculture and industry. Solar energy is also the cheapest source of energy.

Our efforts for the development of solar energy are in experimental stages. In Pakistan people are using solar energy only to operate very small machines and motors. There are about 20 very small-scale solar energy plants. Some of these plants have been commissioned and others are still under the process. It was in December 1981 that the first solar photo static system was commissioned. This system is located at Mumniali, a village located at the distance of 60 km. from Islamabad. The energy production capacity of this system is only 8 KW (kilo Watt), equal to 1000 Watt. Another solar photo static system is located at Kankoi, a village near Swat. This system was commissioned in 1983. In order to increase the use of solar energy in the country the Government must plan to make a comprehensive policy in this direction.

Q.16 What are two major classifications of minerals? Give a brief account of the major minerals found in Pakistan.

Ans: MINERALS: Minerals are the raw materials for our industry. Mineral Oil, natural gas and coal provide fuel for machines while steel and iron are the basic materials used for manufacturing machinery, tools and equipments. Pakistan Mineral Development Corporation was launched in 1975.

Minerals have been classified into the following two major types.

i. Non-Metallic minerals
ii. Metallic minerals

Non-metallic Minerals:

1. **Coal:** In Pakistan we don't have plenty of coal & it is of poor quality. Mining of coal is expensive. Coal mining started in our land in the year 1887. There are three major coal sites:
   a) Salt range in Punjab
   b) Balochistan plateau.
   c) Lower Sindh.
2. **Rock Salt:** Pakistan is very rich in rock salt. It is used for deposits are found in the Salt Range, important mines are Khewra, Kalabagh, Karak etc.
3. **Gypsum:** (G-C For Personal Relations) It is used in cement, chalk, fertilizers, paper, paint. Plaster of paris & rubber industries. It is found in almost all the provinces of Pakistan.
4. **Sulphur:** (Sulphur –Sulphuric acid-Sultan) It is used in making explosives, fertilizers & mainly sulphuric acid, an important chemical for industries. It is also used for refining oil & metals. Sulphur deposits have been found in Koh-e-Sultan in District Chaghi (Balochistan)
5. **Lime-Stone:** (Lime stone-Calcium carbonate-Cement) (Stone-Soap) (Limestone-Lime Bleaching powder) (Powder>Paint>Paper) Pure limestone or calcium carbonate is used in cement industry. It is also used in making glass, soap, paper, paints, lime & bleaching powder. Pakistan is very rich in lime stone deposits especially the northern & western mountains.
6. **Gemstones/Marble:** Marble is a decorative stone used for flooring and exterior decoration of building. It is available in different colors and patterns. It is found in Balochistan & N.W.F.P.
   Mullagori in N.W.F.P. is the best known.

7. **Clays:** A large variety of clays are available in the northern & north western mountains. Various types & uses are:
   - China Clay/Kaolin-ceramic industry.
   - Fire Clay-making bricks.
   - Fuller Earth-Oil drilling, paper industry.

8. **Mineral Oil**

Mineral oil is the most important mineral in the modern age of industrial progress. It is used not only to run heavy machinery in factories but also to run trains, aero planes and other means of transport such as buses, trucks, cars etc. In the field if agriculture we need oil for tube-wells, tractors and thrashers. Kerosene, a byproduct of petroleum, is used as fuel for cooking food.

In Pakistan the annual production of mineral oil is 20.6 million barrels which meets only 45 percent of our domestic requirements. We have, therefore to spend a lot of foreign exchange to import oil from foreign countries.

9. **Miscellaneous:** Barite, Soapstone, Magnetite and several other useful Minerals are also found in different parts.

Metallic minerals: Metallic minerals in Pakistan are not very rich in quality and quantity. A brief account is as follows:

i. **Iron:** Kalabagh iron deposits are the largest but it is a low grade iron.

ii. **Magnetite:** It is an ore with better iron proportion found at Dommel Nissar, Chitral district, Chaghi and Dalbandin.

iii. **Manganese:** It is used in the production of battery & flash bulbs also in steel and pain industry. It has been found in Balochistan.

iv. **Chromites:** It is used in making good quality steel, stainless steel & engineering tools. It is used as lining in metallurgical furnaces. Main deposits are at Muslim Bagh in Balochistan.

v. **Copper:** It is a precious metal, used for making electric wire, utensils, decoration articles and machine parts. Its deposits are at Saindak in Balochistan.

vi. **Bauxite:** It is used for making aluminum. Its deposits are in Azad Kashmir, Salt range in Punjab and Loralai District in Balochistan.

SOLVED EXERCISE

Q.1 Fill in the blanks to make an appropriate statement.

1. Madopur Head works lies on the river .....
2. Ferozpur Head works lies on the river .....
3. On .....India cut off water supplies in the canals coming from Madopur and Ferozpur head works.
4. Indus Water Treaty was concluded in the year.....
5. Under the Indus Water Treaty Pakistan was given control over the waters of .....
6. Under the Indus Water Treaty India was given control over the waters of .....
7. Tarbela Dam is located on the River .....
8. Jinnah, Chashma, Taunsa, Guddu, Sukkur berrages are located on river.....
9. Mangla Dam was built on the River .....
10. There are ..... oil refineries on Pakistan.
11. Natural gas was first discovered in Pakistan at .....
12. Tarbela hydroelectric power project is on the River .....
13. Warsak is on the River .....
14. Warsak is .....miles from Peshawar.
15. Rasul lies between the .....
16. Chichcki Malian hydroelectric power project has been built on .....
17. Karachi Nuclear Power Plant was set up with Canadian collaboration in the year .....
18. Chashma Nuclear Power Plant has been set up with the collaboration of .....
19. KANUP's gross production capacity is .....MW.
20. Chashma Nuclear Power Plan (CHASHNUP) is designed to produce .....MW.
21. In Pakistan the first solar photostatic system was commissioned in .....
22. Hydroelectricity fulfils .....of our requirements.
23. Thermal electricity fulfils .....of our requirements.
24. Nuclear electricity fulfils .....of our requirements.
25. Coal mining started in our land in the year .....

ANSWER KEY

1	Ravi	2	Satluj	3	April	4	1960	5	Sindh Jehlum Chenab
6	Satluj Bias Ravi	7	Indus	8	Indus	9	Jehlum	10	3
11	1952	12	Indus	13	Kabul	14	20	15	Jinnah Berrage.
16	Jinnah Berrage	17	1971	18	China	19	137	20	300
21	1983	22	53%	23	43%	24	2%	25	1887

Q.2 Fill in the blanks by putting one of the three alternatives given in the bracket against each questions.

1. Natural gas was first discovered by Pakistan petroleum Limited in the year ..... (1951, 1952, 1953)
2. Madopur headworks is located on the river..... (Ravi, Chenab, Jhelum)
3. Indus Water Treaty was concluded on ..... (Sep 1959, Sep. 1960, Sep 1961)
4. Tarbela Dam is located on the River..... (Kabul, Indus, Jhelum)
5. Jinnah and Chashma barrages were built on the River..... (Kabul, Indus, Jhelum)
6. Pakistan Coastline is about ..... Km long. (800, 350, 450)
7. The oil and Gas development Corporation was set up in the year..... (1960, 1961, 1962)
8. There are.....big oil refineries in Pakistan. (one, two, three)
9. Warsak is .....miles from Peshawar. (15, 20, 25)
10. Karachi Nuclear Power Plant was set up in the year..... (1969, 1970, 1971)
11. Chashma Nuclear Power Plant is designed to produce.....MW (250, 300, 350)
12. In Pakistan the first solar photostatic system was commissioned on..... (Dec 1980, Dec 1981, Dec 1982)
13. Hydroelectricity fulfils our.....% requirements. (53, 54, 55)
14. Thermal electricity fulfils our.....% requirements (42, 43, 44)
15. Nuclear electricity fulfils.....% of our requirements. (1, 2, 3)
16. Pakistan Mineral Development Corporation was launched in the year..... (1972, 1973, 1974)
17. Coal mining started in the land of Pakistan in the year..... (1887, 1888, 1889)
18. The average yield of maize is about.....thousand tons per annum in Pakistan (1300, 1400, 1500)

1	1952	6	800	11	300	16	1974
2	Ravi	7	1969	12	Dec1981	17	1887
3	Sep1960	8	Three	13	53	18	1400
4	Indus	9	20	14	43		
5	Indus	10	1971	15	2		

Q.3 Fill in the blanks by putting one of the three alternatives given in the bracket against each questions.

1. Soil generally contain only 10% organic material which is known as humus.(True / False)
2. Cholistan area lies in the northern Punjab and extends deep into the province of NWFP. (True / False)
3. The Sindh extension of cholistan is called Thal. (True / False)
4. Thal area lies between the Indus and Jhelum rivers in Punjab Provinces. (True / False)
5. Kharan Desert Occupies a large area of western Sindh. (True / False)
6. The soil of Kharan Desert is not suitable for cultivation. (True / False)
7. Forest is a large area of land thickly covered with trees and bushes. (True / False)
8. The are covered by forests in Pakistan is about 4.8% of the total area. (True / False)
9. The first irrigated mam-made forest in Pakistan was planted 90km south west of Lahore in 1866 at Mangla. (True / False)
10. The forest of Changa Manga was planted for fulfilling the firewood needs of the British (True / False)
11. When the underground water level rises to 1.5 meters or less under the surface of the earth, the process is called water logging. (True / False)
12. Agriculture is the backbone of our national economy. (True / False)
13. Cotton is also known as the golden fibre. (True / False)
14. Maize is an important source of edible oil known as corn oil. (True / False)
15. The average yield of maize is about 1400 thousand tons per annum. (True / False)
16. Balochistan and the NWFP are the sole producers of dry fruit and apple. (True / False)
17. Fifty percent of our petroleum produce is consurned by transport sector. (True / False)
18. Sui is the largest discovered gas field in the world. (True / False)
19. Important Sindh gas fields are located in Kandhkot, Khairpur and Mari (True / False)
20. Punjab gas fields are situated mostly in the Potwar Plateau. (True / False)
21. In 1947 Pakistan had only two hydroelectric power plants. i.e. Malakand. (True / False)
22. There are three major hydroelectric power projects in Pakistan, i.e. Mangla and Warsak. (True / False)

23. Thermal power is generated from heat produced by burning oil, gas or coal (True / False)

24. Karachi is the largest centre for thermal energy production. (True / False)

25. Pipri and Korangi are the two largest thermal electricity plants located at Lahore. (True / False)

26. In the Punjab, thermal power platns are located at Sahiwal, Sargodha, and Islamabad. (True / False)

27. In the NWFP a thermal power plant has been established at Quetta. (True / False)

28. Nuclear power plants are very cheap to build. (True / False)

29. Pakistan has two nuclear power electricity plants namely Karachi Nuclear Power Plant (KANUP) and Chashma Nuclear Power Plant in District Mianwali. (CHASHNUP)

30. There are three major coal producing areas in Pakistan, i.e. Salt Range Baluchistan and Lower Sindh. (True / False)

31. Sulphur deposits have been found in district Bhakkar (True / False)

32. Pure limestone or calcium carbonate is the main raw material for cement (True / False)

33. Mullagori is the best kind of coal. (True / False)

34. China clay is imported from the Peoples Republic of China. (True / False)

35. Chromites is used in making good quality steel and stainless steel. (True / False)

36. Main chromites deposits are located at Muslimbagh near Lahore. (True / False)

37. Manganese is used in battery production, steel industry, flash bulbs and pain industry. (True / False)

38. Silica is used in utensils, decorative articles, ornaments, electric wire and machine parts. (True / False)

39. Bauxite is used for making aluminium (True / False)

40. Coal is mainly used for the preparation of Sulphuric Acid. (True / False)

ANSWER KEY

1	T	9	T	17	T	25	F	33	F
2	F	10	T	18	T	26	F	34	F
3	F	11	T	19	T	27	F	35	F
4	T	12	T	20	T	28	F	36	T
5	F	13	F	21	T	29	T	37	T
6	T	14	T	22	T	30	T	38	T
7	T	15	T	23	T	31	F	39	T
8	T	16	T	24	T	32	T	40	T

Q.4 Put right parts together.

4.A

A	B	C
1. Madhopur Headworks	**a.** River Indus	e
2. Ferozepur Headworks	**b.** September 1960	f
3. Indus Water Treaty	**c.** River Jhelum	b
4. Tarbela Dam	**d.** River Kabul	a
5. Mangla Dam	**e.** River Ravi	c
6. Warsak Dam	**f.** River Satuj	d

4. B

A	B	C
1. Standard area under forest	**a.** Karachi	c
2. Wheat	**b.** Silver Fibre	e
3. Rice	**c.** 25%	f
4. Cotton	**d.** Mullagori	b
5. Largest thermal energy centre	**e.** Rabi Crop	a
6. Best variety of marble	**f.** Kharif Crop	d

SHORT QUESTIONS (FROM EXERCISE)

Q.1 Answer these questions. Answer to each part should not exceed three to four lines.

(1) Define soil? (2011)

Ans: Soil is the material which forms the upper layer of the earth crust. Soil has three layers, its upper layer supports the plants that grow on earth; it is a great source for the supply of food and nutrients to the human beings, animals and plants.

(2) What does ADBP stand for? (2014)

Ans. ADBP stands for Agricultural Development Bank of Pakistan (ADBP) which advances low mark up agricultural lans to the farmers for the purchase of seeds, fertilizers, [pesticides and agricultural equipment such as tractors, tube-wells etc.

(3) How much rice is produced in Pakistan yearly?

Ans. In Pakistan the annual production of rice is about 4000-5000 tons. It occupies move than 10% of the total cropped area. It is cultivated upon an area of 2515 thousand lectures.

(4) Name four important canals of Pakistan? (2013)

Ans. The important canals of Pakistan are:

i. The Upper Bari Doab and Lower Bari Doab are the canals of the river Ravi.
ii. The Upper Chenab and Lower Chenab are the canals of river Chenab.
iii. The Upper Jhelum and lower Jhelum are the canals of Chaj Doab.
iv. Sutlej Valley canals at Ferozwala. Sulaimanki and Islam.

(5) What is the length of the Pakistan coastline and in how many parts is it divided?

Ans. The Pakistan coastline is around 700 kilometers in length. In the east it starts from the border of Sindh Province with India and stretches along the southern Balochistan to the border of Iran in the west. The coastal plain of Pakistan consists of various seaports of which Karachi is the most important one. Other important ports are Bin Qasim and Gwadar.

(6) Enumerate major oil areas discovered in Pakistan?

Ans. The major oil producing areas in Pakistan lie in Potwar Plateau. Of them Khaur was discovered in 1915. Dhullian in 1935. Joya Mair in 1944 and Balkassar in 1946. Among the oil fields located in the districts of Attock and Jhelum are Karsal discovered in 1948. Tut (Dharnal). Kot Sarang and Meyal in 1968 and Fimkassar in 1983-84.

(7) Name major oil refineries in Pakistan?

Ans. The major oil refineries of Pakistan are:

a) National refinery at Karachi
b) Attock refinery at Morga (Rawalpindi).
c) Pak-Arab refinery
d) Pakistan refinery at Karachi

(8) **What does CNG mean?** (2012)

Ans. CNG means compressed national gas. It is compressed at automatic chiller plants. It is used commonly in automobiles fuel.

(9) **What are the major uses of natural gas?** (2011), (2013)

Ans. Major Uses of natural gas are as

a) Domestic fuel
b) Industrial fuel
c) Transportation fuels
d) Industrial raw material for making fertilizers
e) Other chemical uses

(10) **What is meant by MW, how many Watts one MW is equal to?**

Ans. MW stands for mega watt that is a unit to measure electricity. Are mega watt (1MW) is equal and 1 million watts (1000000)

(11) **Enumerate sources generally used for generating electricity?**

Ans. The sources for generating electricity are as follow.

a) Water for Hydroelectricity
b) Oil for thermal electricity
c) Coal for thermal electricity
d) Nuclear power plants.
e) Solar parks for solar electricity

(12) **Name new hydroelectric power projects?**

Ans. Among newly built projects. Chashma Low Head Hydro Project (District Mianwali) completed in 2001 has 184 MW capacity. Ghazi Brotha (District Attock near Tarbela) expected to complete in 2003. Will have 1450 MW capacity.

(13) **Name two thermal electricity plants located at Karachi?**

Ans. Thermal Electricity: Thermal power is generated from heat produced by burning oil, gas or coal. In Karachi the largest centre for thermal energy production in Pakistan. There are six power plants. Pipri and Korangi are the largest two. Six Karachi paltns produce more than 43% of the total thermal energy in Pakistan. In sindh other thermal power plants are located at

(14) **What are the important industries which make use of gypsum?**

Ans. **Gypsum:** Gypsum is an important industrial raw material. It is used in fertilizer, cement, paper, paints and rubber industries.

(15) **Enumerate some common uses of limestone?**

Ans. **Limestone:** Pure limestone or calcium carbonate is the main raw material for cement. It is also used in the preparation of glass, soap, paper, paints, lime and bleaching powder.

Q.1 Encircle the correct option from the given multiple choices.

(1) _____ is defined as a "mean of comfort or help.

A. Wealth B. Oil C. Food D. Resource

Soil

(2) Soils of potowar plateau are classified into _____ groups

A. 2 B. 3 C. 4 D. 6

(3) Indus basin soil can be divided into _____ categories.

A. 2 B. 3 C. 5 D. 6

(4) Kharan desert is located in the province.

A. Punjab B. Balochistan C. NWFP D. Sindh

(5) Soil of south western Blochistan is called

A. Residual B. Loess C. Alluvial D. Bangar

(6) Which is the type of Indus basis soil

A. Bangar B. delta C. Loess D. Alluvial

(7) Khaddar soils are found along the _____ sides

A. River B. Hill C. Village D. Road

Forests

(8) Wood pulp is a primary raw material of _____ industry

A. Paper B. Sugar C. Textile D. Oil

(9) _____ causes rainfall through the process of transpiration.

A. Mountain B. Rivers C. Forest D. Clouds

Agriculture

(10) In water logging, level of underground water rises to _____ meters from the surface

A. 0.5 B. 1 C. 1.5 D. 2.5

(11) Tube well scheme started to reduce water logging is named as

A. SCARP B. PARSC C. CARSP D. PCARS

(12) Pakistan agriculture storage corporation was setup in the year

A. 1971 B. 1972 C. 1973 D. 1975

(13) Nearly _____ % of our agricultural potential remain un exploited

A. 25 B. 50 C. 75 D. 90

(14) According to land deforms 1972 maximum limit of irrigated land holiday was _____acres.

A. 50 B. 100 C. 150 D. 200

(15) Land holding limit in barani land was fixed at _____acres under reforms of 1972

A. 100 B. 200 C. 300 D. 400

(16) Total cultivable area in Pakistan is _____million hectors.

A. 76.91 B. 79.61 C. 67.91 D. 97.61

(17) Out of 79.61 million hectors of cultivable laud only _____million hectors are under cultivation

A. 20.43 B. 24.03 C. 24.30 D. 30.24

Agriculture System

(18) Rice occupies move than _____% of the total cropped area

A. 10 B. 20 C. 30 D. 40

(19) In 1999-2000 total area where cotton was cultivated was _____thousand hectors.

A. 2938 B. 2983 C. 2398 D. 2389

(20) In 2000 total production of sugarcane was estimated at _____thousand tons.

A. 46363 B. 46336 C. 46633 D. 43663

(21) The average yield of Maize is about _____thousand tones per annum

A. 400 B. 1400 C. 4000 D. 14000

(22) Total production of rice in Pakistan is about _____ thousand tones.

A. 4-5 B. 6-7 C. 8-9 D. 9-10

(23) In 2000-2001 wheat was cultivated on nearly _____% of total crop land

A. 40 B. 42 C. 44 D. 46

(24) _____is one of Pakistan's important cash crop.

A. Wheat B. Barley C. Cotton D. Pulses

(25) _____% of the total Pakistani tobacco crop fall in NWFP and Punjab.

A. 75 B. 85 C. 95 D. 100

(26) Jawar and Bajra are known as _____

A. Pulse B. Millets C. Cash crops D. silver fiber

(27) _____is the most important of the pulses grown in Pakistan.

A. Gram B. Moong C. Masoor D. Mash

(28) Pakistan produces _____of its total edible oil requirement

A. 28% B. 32% C. 60% D. 68%

(29) _____soil is very suitable for the cultivation of peanuts.

A. That B. Thal C. Indus D. Potowar

(30) Only 0.6 million tones out of _____million tones of edible oil requirement is produced in Pakistan.

A. 0.9 B. 1.9 C. 2.9 D. 3.9

(31) Which are rich sources of Protein

A. Rice B. Wheat C. Cotton D. Pulses

Irrigation

(32) There are _____main types of canals in Pakistan.

A. 2 B. 3 C. 4 D. 5

(33) The underground water channel for irrigation are called as:

A. canal B. spring C. Karez D. Rood kohi

(34) About _____of total cultivable lands of Pakistan depends upon irrigation.

A. $\frac{1}{2}$ B. $\frac{1}{4}$ C. $\frac{3}{4}$ D. $\frac{2}{3}$

(35) World Bank offered his good offices to solve water problem between India and Pakistan in

A. 1950 B. 1951 C. 1952 D. 1955

(36) Terbela Dam is located at distance of _____km from Attock

A. 44 B. 45 C. 45 D. 47

(37) Dam has the storage capacity of _____million acnes feet water.

A. 5 B. 5.5 C. 6 D. 6.5

(38) Which Dam supplies water to chaj and Bari doabs

A. Terbella B. Mangla C. Wassak D. Rawal

(39) Rasul Barrage is located on the river

A. Ravi B. Bias C. Jehlum D. Chenab

(40) Chasma Berrage is located on the river

A. Indus B. Jehlùm C. Bias D. Ravi

Power Resources

(41) Natural gas fulfills our _____% energy requirement.

A. 15% B. 25% C. 35% D. 45%

(42) In the sea, oil exploration was started in the year.

A. 1975 B. 1980 C. 1985 D. 1990

(43) After discover gas from sui, _____move gas reserves have been discovered.

A. 15 B. 20 C. 25 D. 30

(44) The village Mumnialli, where 1st photostatic system was commissioned is at a distance of _____km from Islamabad.

A. 40 B. 50 C. 60 D. 70

(45) Ghazi Brotha project has a capacity of _____MW

A. 1350 B. 1400 C. 1540 D. 1500

(46) Chasma low head hydro project was completed in the year

A. 2000 B. 2001 C. 2002 D. 2003

(47) Rasul power plant was commissioned in the year

A. 1950 B. 1952 C. 1954 D. 1956

Mineral Resources

(48) Kalabagh iron reserves are estimated of _____million tones.

A. 303 B. 306 C. 309 D. 312

(49) Copper is a precious _____

A. Metal B. Non-metal C. Medicine D. Wood

(50) Onyx is type of

A. Iran B. Marble C. Clay D. Wood

ANSWER KEY

1	D	2	B	3	B	4	B	5	B
6	A	7	A	8	A	9	C	10	C
11	A	12	C	13	C	14	C	15	C
16	B	17	A	18	A	19	B	20	A
21	B	22	A	23	D	24	C	25	C
26	B	27	A	28	D	29	B	30	B
31	D	32	B	33	C	34	C	35	C
36	D	37	B	38	B	39	C	40	B
41	C	42	C	43	C	44	C	45	C
46	B	47	B	48	C	49	A	50	B

Answer these questions. Answer to each part should not exceed three to four lines.

Q.1 Define natural resources?

Ans: Those things which are utilized by human being and are a Gog gifted are called natural resources e.g soil, Rivers, minerals, forests etc.

Q.2 What do you know about loess?

Ans: Loess: The wind deposited loess is brown in colour it is very fertile but unfortunately it does not cover extensive area of the Plateau.

Forests

Q.3 Describe any three advantages of forest?

Ans: Following are the three advantages or forests.

i. Forests help to preserve agricultural land from the danger of erosion.
ii. They are the main source of timber for building and furniture as well as the firewood.
iii. Wood-pulp is the primary source of raw material for paper industry.

Q.4 Give any two causes of shortage of forest?

Ans: Extensive areas of land in our country are unsuitable for forestation, especially the dry highlands and the desert areas.

Ans: Inadequate supply of water in our region has also retarded the process of forestation.

Agriculture

Q.5 What is meant by water logging and salinity?

Ans: Water Logging and Salinity: When underground water level raises to 1.5 meters or less under the surface of the ground it is called water logging. This is the most serious soil disease because it makes the growth of plants impossible or extremely difficult. Subsoil salts are dissolved in this water and deposited on the surface of the soil making it unproductive and rendering it unsuitable for agriculture use. This si called salinity.

Q.6 Enumerate any three agricultural problems of Pakistan?

Ans: In Pakistan agriculture has to face many problems. Some of them are given here.

a. Shortage of water for irrigation purpose
b. Under utilization of cultivable land.
c. In adequate transport facilities.

Q.7 What is land limit for owner under reforms of 1972?

Ans: Under the land reforms introduced in 1972 maximum limit of the land holding was fixed at 150 acres irrigated and 300 acres non-irrigated or Barani. The land exceeding this limit was procured from the big land-lords and the same was allotted to the landless tenant, at nominal price, payable in easy installments.

Q.8 What are solutions for the agricultural problems? Describe any two.

Ans: Building of Farm to Market Roads: Roads were built for providing better transportation facilities to the farmers.

Q.9 When and why was PASCCO setup? (2010)

Ans: To ensure reasonable price of the yield for farmers, the government made arrangements for the procurement of major crops. For this purpose Pakistan Agricultural Storage Corporation (PASCCO) was set up in 1973.

Agriculture System

Q.10 Name four Rabi crops?

Ans: Provision of Agricultural Subsidy: Agricultural subsidy was made available to the farmers on fertilizers, electricity, tractors and agricultural implements.

Rabi crops are as follow

Wheat, barley, oil seeds, pulses

Q.11 Name four Kharif crops?

Ans: Kharif crops are as follow

Rice, cotton, Maize, Sugar cane, Tobacco

Irrigation

Q.12 What is meant by inundation canals?

Ans: Inundation Canals. These canals run only during rainy season when water level in rives rises. The quantity of water the supply is uncertain. Many old canals from the Indus and the Chenab fall in this category.

Q.13 What are karez and rood kohi?

Ans: Karez and Rood Kohi: In many dry, high temperature and sub-mountain areas of Balochistan, small underground canals are made to avert the danger of evaporation. Only in Quetta-Pishin district dozens of such canals irrigate an area of thousands of hectares. Another area of several thousand acres in Baluchistan is irrigated by water streams originating from mountain heights. These water courses, called Rood Kohis, are generally not very wide and do not carry large quantities of water.

Q.14 Name any three link canals of Pakistan?

Ans: The Rasul-Qadirabad Link Canal carries water from Rasul Barrage (on the River Jhelum) to the Chenab.

The Sidhnai-Mailsi Link Canal carries the same water into the Sutlej

The Balloki-Sulaimanki Link Canal connects the Ravi and the Sutlej.

Q.15 Write a short note on the Indus basin treaty?

Ans: Indus basin treaty was signed between India and Pakistan in 1960 to resolve the water conflict. Under this treaty 3 eastern rivers were given to India (Ravi, Prias, Satluj) and

three western rivers were given to Pakistan (Sindh, Chenab, Jehlum). World bank contributed a huge amount for further implementation of pact.

Q.16 Define Doab. Also name four Doab of Punjab. (2012)

Ans: The land between two consecutive rivers is called as Doab or inter–flue the four Doabs of Punjab are:

- Bari Doab (Between Satulaj and Ravi)
- Rachna Doab (Between Ravi and Chenab)
- Chej Doab (Between Chenab and Jhelum)
- Sindh Sagar Doab (Between Jhelum and Indus)

Live Stock

Q.17 Enumerate the advantages of live stock?

Ans: They are used in

i. Agriculture (cultivation, threshing etc)
ii. Transportation of luggage from one place to other.
iii. Cows, buffalos, goats and sheep provide milk, yoghurt; butter and ghee (butter oil).
iv. Their dung is used both as manure and as fuel for cooking.
v. Goats, camels, oxen and buffaloes are slaughtered for meat.
vi. Sheep provide wool.
vii. The hides and skins are made into leather which is locally consumed as well as exported in large quantities.

Power Resources

Q.18 Name the oil refineries of Pakistan?

Ans: Oil refineries of Pakistan

Attock refinery
National refinery
Pakistan refinery

Mineral Resources

Q.19 Name the clays of Pakistan?

Ans: **a)** Koolin or china day used in ceramic industries
b) Five day used in furnace making
c) Fullers earth used in oil drilling
d) Bentonite

Q.20 What is Magnetite?

Ans: Magnetite: An ore having a better iron proportion has been found at Dommel Nissar. High grade iron has been found 70km northeast of Chitral in Zarimure Mountains. Iron deposite have also been discovered near Chagi. Chilgazi and near Dalbandin at Baluchap-Kundi.