



CLASSIFIED

WORKED SOLUTIONS

PAKISTAN STUDIES

ENVIRONMENT OF PAKISTAN

(Syllabus 2059)

(Paper 2)

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 form Topic By Topic


 compiled for O Levels


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Revision

-  June **2023** Paper 2
-  November **2023** Paper 2
-  June **2024** Paper 2
-  November **2024** Paper 2

TOPIC 2

Climate of Pakistan

Learning Objectives

Candidates should be able to:

- know the distribution of temperature and rainfall, including monsoon, depressions and convectional rain
- know seasonal and regional variations, and the factors contributing to them, including depressions, thunderstorms and cyclones (typhoons)
- understand the causes of the monsoon [Knowledge of the causes of other types of rain is NOT required]
- describe and explain the characteristics of the climate of the arid, semi-arid, humid and highland regions, including seasonal variations
- know the influence of latitude and longitude on day length and climate
- understand the influence of the climate (both the benefits it brings and the problems it causes) on the economy and on the lives of the people
 - the influence of low temperature, ice and snow on the lives of people in the mountains
 - the influence of rain storms and flooding on agriculture, industry and communications
 - the problems caused by drought and shortage of water supply on agriculture and industry

1. [June 2013/P02/Q1 a]

Study Fig. 1, which shows the climate of Quetta.

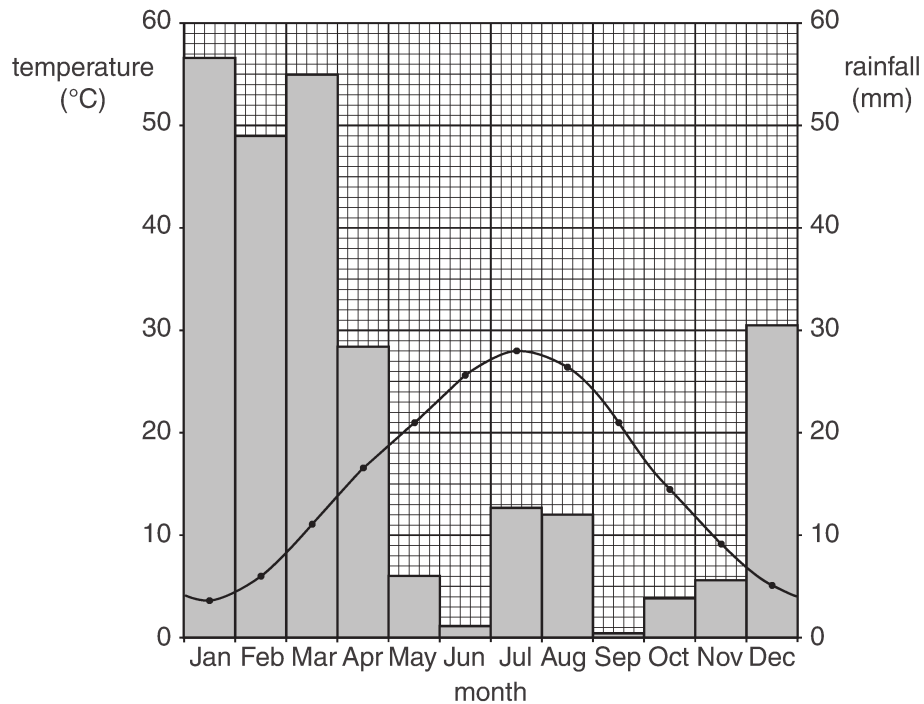


Fig.1

(i) Describe the annual distribution of rainfall at Quetta.

.....

.....

.....

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.....

.....

.....

.....

[3]

(ii) State **two** causes of rainfall at Quetta and name the months when each occurs.

Cause 1

.....

Months

Cause 2

.....

Months

[4]

(iii) What are the maximum and minimum temperatures at Quetta, and when do they occur?

Maximum..... Month.....

Minimum..... Month.....

[2]

(iv) Give **two** reasons why temperatures are higher in the summer than in the winter at Quetta.

1

.....

2

.....

[2]

2. [June 2013/P02/Q3 a]

Study Fig. 5, which shows the climate of Multan.

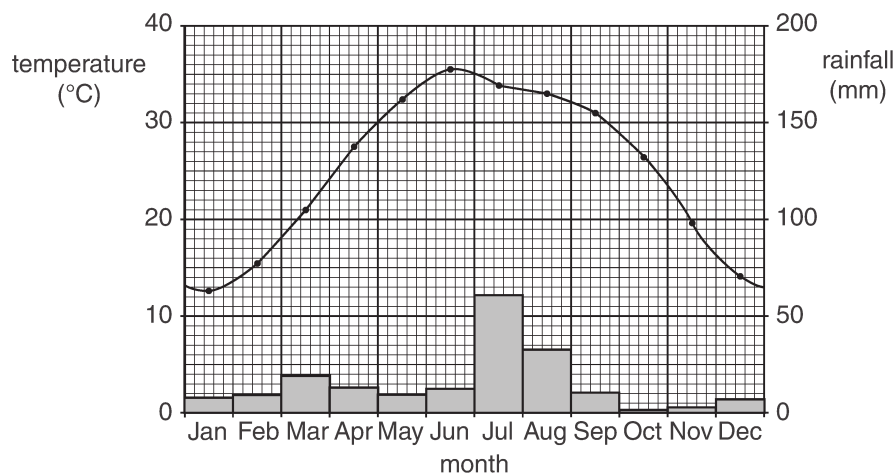


Fig. 5

(i) In which months is the temperature above 25 °C?

..... [1]

(ii) What is the maximum rainfall and when does it occur?

maximum rainfall month [1]

- the month of sowing
- the months of growth
- the month of harvest

(iv) Explain why the months you have marked for **growth** have the best climatic conditions for cotton.

[4]

Study Fig. 3, a graph showing rainfall in Dir, Khyber Pakhtunkhwa.



(i) What is the minimum rainfall, and when does it occur?

.....
..... [2]

(ii) What is the maximum rainfall, and when does it occur?

.....
..... [2]

(iii) For how many months between October and June is the rainfall above 80 mm?

..... [1]

(iv) Give **two** causes of high rainfall between October and June at Dir.

.....
..... [2]

(v) What is the main cause of summer rainfall at Dir?

..... [1]

4. [June 2015/P02/Q1 a,b]

(a) (i) On the outline map of Pakistan Fig. 1 mark and shade **two** areas which experience low annual rainfall (125 mm or less). [2]

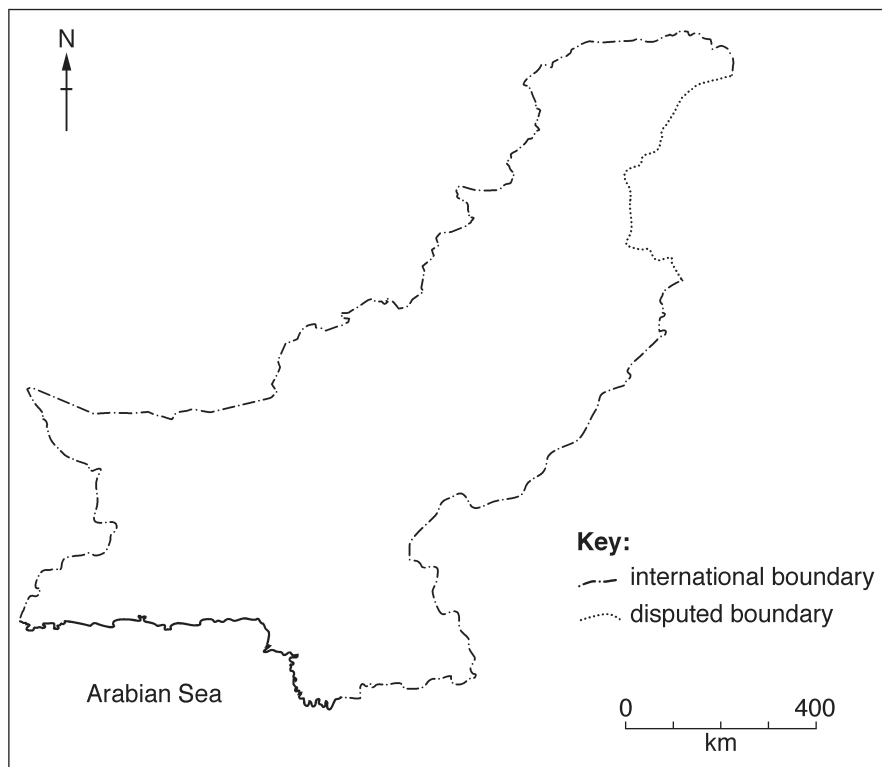


Fig. 1

(ii) Name the crop which is mainly grown in these areas of low annual rainfall.

..... [1]

(iii) Explain the difficulties for people living in areas of low rainfall.

.....

..... [3]

(b) (i) Study Fig. 2 which shows rainfall data for two cities on the River Indus.

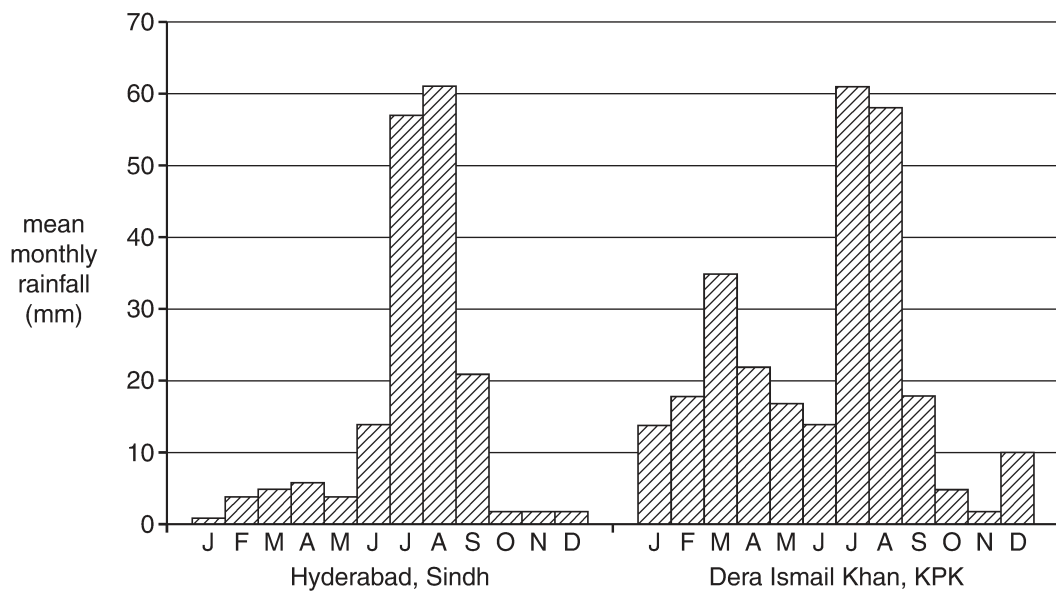


Fig. 2

A. Compare the amount and pattern of monthly rainfall in Hyderabad with that of Dera Ismail Khan.

.....

..... [3]

- B. Give **three** reasons for any similarities or differences in the two patterns of rain-fall.

1

.....

2

.....

3

.....

[3]

- (ii) Explain the effect of flooding on the local economy and transport links in communities along the River Indus.

.....

.....

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.....

.....

.....

..... [4]

5. [Nov 2015/P02/Q2 c]

- (i) A. From the list below, circle **one** place which regularly experiences the highest temperatures in June in Pakistan.

Quetta Karachi Jacobabad Abbottabad Larkana Zhob

- B. Which range best describes the highest temperatures recorded? Put a tick in **one** of the boxes below.

Temperature (°C)	TICK
46–48	
49–51	
52–54	

[2]

(ii) Explain why the place you have named in (i) is the hottest place in Pakistan.

.....

.....

..... [2]

(iii) Describe the effects on people of living in extremely hot climates.

.....

.....

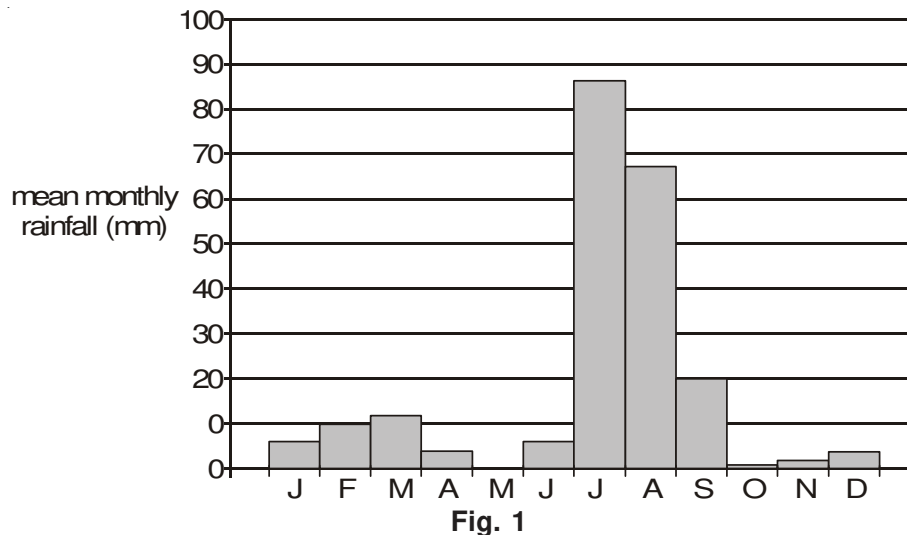
.....

.....

..... [3]

6. [Nov 2016/P02/Q1 a,b]

(a) Study Fig. 1 which shows the distribution of monthly rainfall in Karachi.



(i) A For how many months does Karachi experience less than 10 mm rainfall?

.....

B Estimate the total rainfall in Karachi for the period July to September.

..... [2]

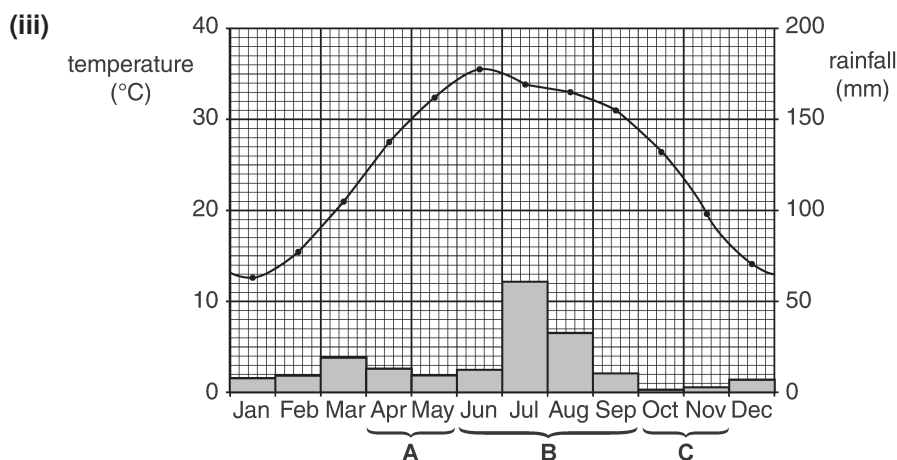
Suggested Answers

Topic 2: Climate of Pakistan

1. (i) In Quetta, the rainfall is highest in winters from Oct – March. There is 57 mm rainfall in January, the total rainfall in winter is 202 mms. There is no rainfall in September month. In summers, July has the highest rainfall 13 mms. The total rainfall in summer is 62 mms. Annual total rainfall is 264 mms.
- (ii) **Cause 1** Western depressions. **Months** From December to April
Cause 2 Thunderstorms **Months** From July to August
- (iii) **Maximum** 28 °C **Month** July
Minimum 4 °C **Month** January
- (iv) 1. The sun is on a higher angle, it is on the head. There is higher insolation.
 2. There are longer hours of day light with less clouds in the sky.

2. (i) April – October

- (ii) **Maximum rainfall** 61 mms **Month** July



A : the month of sowing — April / May

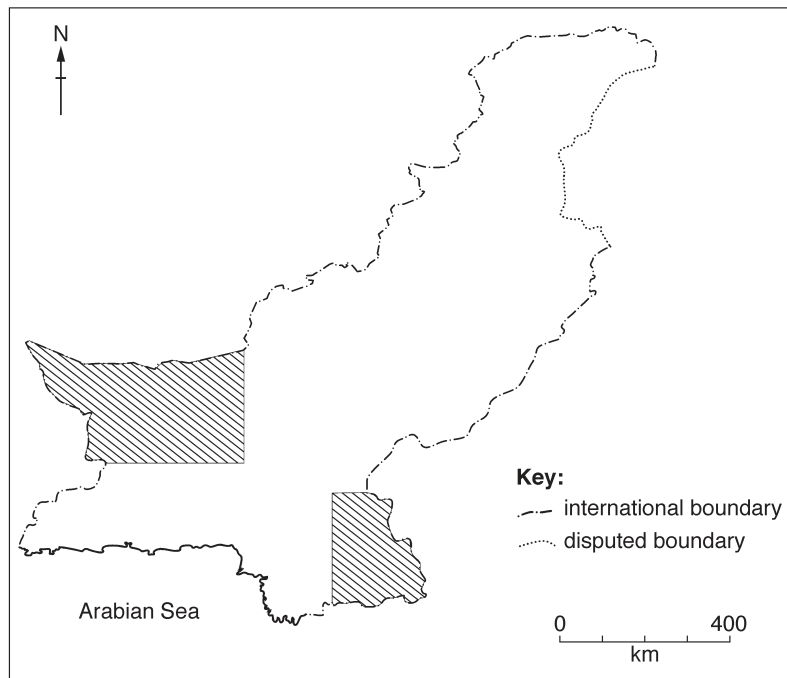
B : the months of growth — June - September

C : the month of harvest — October - November

- (iv) Cotton is a Kharif crop, it is sown in April / May and harvested in October / November. It needs temperature between 25 °C - 35 °C for growth. The temperatures at night are mild. It needs 1000 mm rainfall which is fulfilled by monsoons or if needed by irrigation. During the harvest season, October / November have very less rain, light shower helps to bloom the cotton bolls but frost for a long time is dangerous.

3. (i) 50 - 52 (mm) in October
 (ii) 253 - 254 (mm) in March
 (iii) 6 months
 (iv) 1. Western depression. 2. Relief rainfall
 (v) Monsoon Rainfall

4. (a) (i)



- (ii) Dates

(iii) There is lack of water for drinking, cleaning and other domestic uses. If the rivers are not available, people have to collect water from distant areas. There is less water for irrigational purpose. It can lead to seasonal drought because rainfall is not on time and is less. Live-stock farmers cannot find water for their animals and have to move from one area to another in search of water and fodder.

- (b) (i) A. Both cities have high rainfall in July & August approximately 120 mm. They have identical rainfall in June & November. D.I. Khan has a greater total as 274 mm annually opposed to 179 mm for Hyderabad. D.I. Khan has mostly higher rainfall in all months except Aug/Sept. in contrast with Hyderabad. Therefore, its pattern is more evenly distributed.
- B. 1. Both have mostly same rainfall in July/August as they experience Monsoon rainfall.
 2. Dera Ismail Khan experiences rainfall from western depression in winter (Dec-March) but Hyderabad does not.
 3. D.I. Khan also experiences rainfall due to thunderstorms from April-June but Hyderabad only depends on the Maritime influence.
- (ii) Flooding damages the crops, livestock and property of the peoples it causes a loss of income, workplaces are temporarily closed which leads to unemployment. There is loss of production and profit. Electricity supply can stop. The Transport links are cut down as rivers become un-navigable, roads, railways are destroyed and the bridges are also washed away.

5. (i) A Jacobabad.

(ii) B

Temperature (°C)	TICK
46–48	
49–51	
52–54	✓

(ii) Jacobabad is a very hot area of Pakistan. It is in Sindh province. It is far away from the effect of sea influence (Maritime). It is under the continental effect mostly under the high angle of the sun.

(iii) In extremely hot climates outdoor working is effected. People have to stay indoors. There are many people who cannot bear the heat, they can die. Some can be dehydrated due to lack of drinking water. Heat stroke, heart attack and sunstrokes are common.

6. (a) (i) A Seven months B 173 – 175 mm

(ii) Coastal climate (maritime) Warm Summer, Mild winters

(iii) Source: Monsoons as a secondary source.

Direction: South West

(iv) There will be floods which could damage the transportation and communication system. Electricity transmission lines will be disturbed. There will be damage to work places and homes. There can be loss of lives. The drains will be blocked leading to stagnant water therefore epidemic can breakout. It causes damage to Roads, railways, ports airports, so people are unable to get to work.

(b) The area is near a river which is a source for irrigation. It is an Active flood plain having alluvium deposit which makes the land fertile. Water and nutrient soil helps to grow sugarcane and rice. The area is upto 40 km wide which is a large area for intensive cropping. Machinery can easily be used, animals can also graze in open land. The vast land can give an increased yield of crops.

7. (a) (i) It means a short period of heavy rains (July to September).

(ii) There is wet season, rainfall between July – September. Very little rain is observed from Oct – June. There is high annual temperatures 30 – 34 °C. Highest temperature is in June before the wet season.

(iii) There is low pressure on land in July, and high pressure in December. July has high temperature with more humidity but December has low cooler temperatures with less humidity.

(b) (i) Quetta

- (ii)
1. Farming is not possible in low temperatures many people have to practice transhumance.
 2. There is a loss of telecommunications and electricity due to heavy snowfall.
 3. It is difficult to travel by road and air due to fog, snow and landslides.
 4. There is danger of death due to cold and frostbite.

8. (a) (i) • The land is a sandy area, made of ridges and sand dunes.
• Sparse vegetation can be seen as thorny shrubs.
• It is a barren and dry area.
- (ii) The desert area has a high temperature as it is an arid land with scarce rainfall difficult to survive. Dust and sand storms are common.
The crops cannot be grown easily as there is shortage of water sources, also because of the lack of rainfall. Only scrubs or thorny bushes could grow.
- (iii) 1. Extremely cold, freezing temperature.
2. Snow capped area shows that blizzards are common.
- (b) 1. If the area is closer to the equator, it would be warmer or hot.
2. To the further North, away from the equator, it will be cold.
9. (a) (i) Monsoon **winds** blow towards the heart of the **continent** in **summer**. They blow towards the sea in **winter**.
- (ii) These winds blow from the Arabian Sea (secondary Monsoon) or the Bay of Bengal (primary Monsoon) towards the low pressure areas developed due to strong heat in northern parts of Pakistan. The inland areas tend to get heated more quickly than the water body of Arabian Sea. These winds, carrying a lot of moisture, reach the hot low pressure areas of Pakistan. They strike the heated land, expand and rise to a significant height to get condensed. This is followed by spells of heavy shower.
- (iii) Unusually heavy rains cause floods in the Indus Plains making roads inundated, thus causing difficulties for traffic. This creates difficulty for the students and workers to reach educational institutes and work places. Floodwater damages and destroys houses, especially mud-build structures. The affected people are rendered homeless and tend to lose jobs as factories and markets have to be closed. Outbreak of water borne diseases like malaria, typhoid and dengue may afflict the flood victims. This puts an additional burden on healthcare services. Many people are likely to be electrocuted resulting in more health problems. However, floods bring more water to barrages and dams that is used to produce more HEP / Hydroelectric Power, and add to irrigation canals. Thus it helps in overcoming power and water shortage crisis.
- (b) Though building more flood management schemes involve huge expenses and deforestation to get a clear land, they are essential for the people and economy of Pakistan. Big reservoirs prevent many losses that include damage to houses, farms and factories. Relief and rehabilitation services require huge sums of money that may create more problems for the indebted state of Pakistan. Frequent and destructive floods may hamper with development projects on one hand, and loss of days of work in Industry and business, and study in educational institutes. The government has to levy more taxes to make up the losses caused by this vicious cycle. If rivers are allowed to flood naturally, they enrich soils of the floodplains by adding nutrients to them. This ensures an improved yield the following year. Some floodplains can be used for establishing fish farms in several parts of Pakistan that will satisfy the growing needs of better quality food for a growing population. More water will be available for raising a low water table and feeding irrigation canals. To conclude, a comprehensive strategy is required to build flood management schemes like Bhasha Diamir Dam. Moreover, Kalabagh Dam project should be revitalized by overcoming interprovincial water conflicts so that a serious power and water shortage crisis may be overcome with long term benefits.

TOPIC 11

Transport and Telecommunications

Learning Objectives

(a) Internal transport

Candidates should be able to:

- interpret maps to describe the regional variations in the density and pattern of the road, rail and air transport networks within Pakistan
- explain the factors which help and hinder the location, maintenance and development of roads, railways and airports
- describe improvements that have recently taken place in road, rail and air communications, and consider the feasibility of new developments
- compare the advantages and disadvantages of road, rail and air transport within Pakistan for both goods and people
- evaluate the development of new transport schemes, including motorway and airport development

(b) International transport

Candidates should be able to:

- identify on a map those roads (including the name of the pass they use, where relevant) and railways which cross the international boundary and are in use for at least part of the year
- identify on a map the ports of Keamari, Qasim and Gwadar, and the cities with international airports
- explain the factors which affect the location and development of cross-border roads and railways, seaports, dryports and airports
- explain what is meant by the term dry port, name an example of one and explain why they have been developed in many cities of Pakistan

(c) Telecommunications

Candidates should be able to:

- explain the importance of radio, television, phones, fax machines, emails and the internet in the fields of education, industry, services and trade
- understand the problems of providing telecommunications in some parts of Pakistan
- evaluate the role of telecommunication in the development of Pakistan

1. [June 2014/P02/Q3 a(iii),b,d]

- (a) Give **two** reasons why air transport is used to carry lightweight or valuable goods to other countries instead of roads. [2]

1

2

- (b) Study Fig. 6 an advertisement for cotton fabric.

COTTON FABRICS INTERNATIONAL



FOR THE BEST QUALITY COTTON

Look at the huge range of cotton cloth on our website

www.cottonfabricsinternational.com

Contact Cotton Fabrics International, Faisalabad, Pakistan

Tel. 041-9234188

Fax. 041-9234189

E-mail: cottonfabricsinternational@pakcom.com

Fig. 6

- (i) State **three** ways in which this company can be contacted.

1

2

3 [3]

- (ii)** Explain the importance of good communications to a business such as Cotton Fabrics International.

..... [3]

- (c)** To what extent could a better road network increase the development of small scale and craft industries of Pakistan?

..... [6]

(a) Give an example of a dry port and explain why it is located where it is.

Explanation

.....

.....

.....

[3]

- Explain why this motorway might be needed. To what extent would this proposal be possible?

.....

.....

.....

.....

.....

.....

.....6

[6]

Pakistan Railways now carry less than 10 percent of Pakistan's passenger traffic and 5 percent of its freight.

[6]

4. [June 2015/P02/Q4 b]

(i) Study Photographs A and B which show airports in Gilgit and Chitral.



Photograph A



Photograph B

Using the photographs and your own knowledge describe the problems in providing air transport in the northern areas of Pakistan.

.....

.....

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.....

..... [3]

- (ii) Explain the advantages to Pakistan as a developing country of providing more air transport routes.

.....

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.....

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.....

.....

..... [4]

5. [Nov 2015/P02/Q5 b(iii)]

Study Photographs C and D.



Photograph C



Photograph D

- [5]

[illegible]

Suggested Answers

Topic 11: Transport and Telecommunications

1. (a)
 1. For safety purpose
 2. Quick transportation
 3. Less risk of accidents
(b) (i)
 1. Telephone
 2. Internet (email / website)
 3. Letter or visit
(ii) Good communications link the dealers. They are good for advertisement. The system helps to know about the market and demand. Global links can develop providing international exposure. It helps to make stable the price of the products.
 - (c) A better road network connects different areas. They provide access to the raw-materials and markets. Tourists can move from one place to another buying crafts as soveniers from the ar-eas. People will be employed in small scale and craft industries making the living standard bet-ter, e.g., Swat or Skardu can be linked by road network. Infrastructure as electricity, gas, and water supply can be provided to the areas for development.

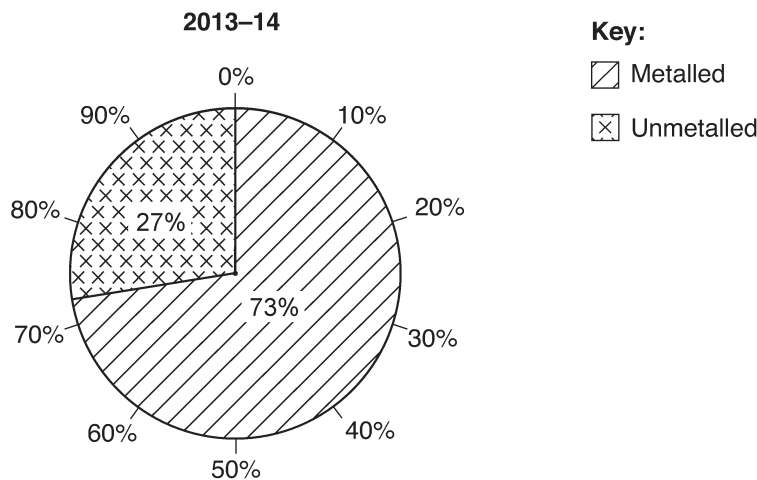
The problems which can hinder the development are closing of roads in mountainous areas due to avalanches, snow and land slides. The cost of construction of roads and transport increases which burdens the economy.
-
2. (a) Example: Lahore,

Explanation: It is an Inland area far away from the sea. It is mostly in the largest cities. It is near the industrial areas so that they can bring their goods to the nearby dry ports. The dry port is therefore located in areas with a road and rail link to the Karachi seaport.
 - (b) It is desirable to have a new route to open up a seaport to relieve pressure on Karachi port. It enables quicker and more efficient trade of goods. Supply of raw material and provision of manu-factured goods can be easily done. The government must fund and the Indus Highway could be easily upgraded to motorway but to build this motorway more expenses would be needed. The coast could not be connected to motorway due to mangrove swamps and delta region as it is prone to floods. The cutting of mangroves would be needed which can lead to deforestation and reduction in fish breeding. On the other hand, Keti Bandar is too small a port to be served by a motorway.
-
3. The government must invest and maintain the railways. They must provide faster trains as Shalimar, Tezro and Karachi Express. They can also attract private funding, launch new services along with computerized system to improve them. Private companies must be allowed to use the tracks. More Electrification on main lines (Karachi to Lahore) is required. They can make dual track on routes as Khanewal to Lodhran. Pakistan has attracted foreign funding e.g. Korakoram Express, from Lahore to Karachi, launched in 2002 by China.

It is impossible to develop railway in mountain areas of Balochistan, Gilgit Baltistan and KPK. In many areas there is a single-track network, which delays the travel, there is lack of maintenance as the sleepers and berths are old. The locomotives are mostly outdated; there is inefficiency in tim-ings along with uneconomic stations. Major cause is lack of investment in Railways.

4. (i) Gilgit and Chitral are mountainous areas with a rugged terrain. There is a little level land for a runway which can be feasible for a small aircraft. The frequent poor weather due to clouds, fog and snow creates problems. The telecommunication network is disturbed. The services are mostly unreliable. There is also lack of funding for air transport by the government as there are few passengers.
- (ii) If there are more transport routes, more tourists can visit the area leading to the earning of foreign exchange. Many business trips can be planned. More people can be employed in the airline industry. More trade of fragile and perishable goods can be increased. People can reach their destinations quickly & in time. It can open up inaccessible areas of Pakistan in north such as Skardu, Dir etc.
5. A: Photograph C is a 4 wheel jeep which is overloaded with large pieces of timber.
- B: Photograph D is a truck moving on an uneven road. The Mountain road is very narrow and steep, there are no fences for security. There is a danger of falling from the edges. Mostly during winter the road is blocked due to land slides. The road is sometimes closed due to snowfall. The road is unmetalled (a Kutcha road) uncomfortable for use of heavy vehicles.
6. The Lowari Tunnel will help Chitral valley to no longer cut off from the rest of Pakistan for 6 months per year due to snow. It can be accessed by road in all weathers. Its opening will shorten the journey to Peshawar by half. It will provide access to hospitals, university, colleges and airports in Peshawar and Islamabad. Tourism will develop and more higher income could be earned which will help in the development of better infrastructure as electricity, water, gas supply and other roads. The problems faced will be high cost of construction and maintenance. The area is targeted by terrorists in many - circumstances. There will also be a loss of scenic in beauty. In my opinion, the opening of the Lowari Tunnel will be helping the increase of trading and earning a lot of foreign exchange to make the balance of payments positive.
7. (i) 28500 — 29000
- (ii) A: Internet use is increasing but telephone lines are decreasing.
- B: increase in mobile phones and social media as Facebook, Google and Skype.
- (iii) Extension of Information Technology throughout Pakistan needs more capital. There is lack of finance by the government. People some times cannot afford the payments & bills. There is a risk of cyber attack. Load shedding in urban areas and lack of electricity in rural areas is a great hindrance. We also lack IT professionals. Technology has to be imported which effects the balance of payments. Our elder generation and tribal societies also create hindrance in the development of IT. Sometimes natural disasters as earthquakes & floods also destroy the cables.

8. (i)

(ii) $73\% - 56\% = 17\%$ increase.

(iii) Any two from,

1. It is quick and efficient which helps to save time while travelling.
2. As industrial estates are present, there are employment opportunities for the people who can easily travel.
3. Cities, towns and remote rural areas will be better connected
4. It will help in faster supply of raw materials and finished goods
5. Import export trade will be more efficient due to quicker trade routes
6. It will relieve pressure on existing roads

(iv) It is a sandy and rugged rocky terrain which can increase its construction cost. The climate conditions are unbearable due to heat, the extreme arid conditions create a great difficulty for the construction workers. Traffic can be hampered due to sand storms. Government also does not want to invest a lot due to low population density which leads to low returns. There is a great influence from the Tribal rulers who do not want any development in the areas and therefore there is less security.

9. The use of global telecommunications has improved the employment opportunities in Pakistan e.g. in cyber cafes, TRG companies for buying the goods online. The jobs available are tertiary jobs with formal setups, getting fixed salaries and working for fixed timings. This can also help them improve their working conditions. Online banking system can help get linked at any time of the day. Many companies can make their websites to advertise their goods which can be sold worldwide to earn a good amount to improve their standards.

On the other hand it can also reduce the jobs available due to under-employment because of lack of education and skills to work on computers. Also there is not much demand in developing countries like Pakistan due to low purchasing power of the people. Loadshedding can also be a hindrance in providing proper global telecommunications to all. However, in my opinion more capital is needed to set up the global telecommunication systems everywhere.