a) Agricultural systems

Candidates should be able to:

• understand how small-scale subsistence farming, cash crop farming and livestock farming operate as systems made up of inputs, processes and outputs.

b) Crops and livestock

Candidates should be able to:

• identify on a map the main areas where cotton, rice, sugar cane and wheat are grown, and the main areas where buffalo, cattle, goats, sheep and poultry are reared
• recognise (from photographs) fields of cotton, rice, sugar cane and wheat; recognise (from photographs) buffalo, cattle, goats, sheep and poultry
• state the uses of the crops named above
• state the main products of the livestock named above and the uses of those products
• identify the main areas for the cultivation and growth of each of the following: apples, apricots, bananas, dates, maize, mangoes, millet, oilseeds, oranges, pulses, tobacco and vegetables. Know why they are grown there and state an important use of each.

c) Factors affecting production

Natural factors: topography, climate (for both kharif and rabi crops), soils, pests and diseases
Human factors: capital, labour, size of holdings, farming practices, irrigation (types and methods), waterlogging and salinity (including solutions), governmental actions to increase production

Candidates should be able to:

• explain how natural and human factors affect production **on small-scale subsistence farms**, including:
– rice grown using traditional methods of ploughing, transplanting, irrigating, harvesting and threshing on small, fragmented holdings using family labour
– wheat grown in areas dependent upon rainfall (barani farming areas)
– dates and vegetables grown using karez irrigation in a desert oasis
• explain how natural factors, including climatic requirements, and human factors affect the production of cotton, rice, sugar cane (kharif crops) and of wheat (a rabi crop) **under the cash crop farming system**
• explain how natural and human factors affect **livestock farming** (poultry farming, the keeping of buffalo and cattle, the keeping of livestock) on small-scale subsistence farms and the keeping of cattle, goats and sheep on a nomadic or semi-nomadic basis, including transhumance
• describe the different types of irrigation and explain the advantages and disadvantages of each for small-scale subsistence farming, and for the growing of cotton, rice, sugar cane and wheat:
– canal irrigation – karez, inundation and perennial canal
– lift irrigation – persian wheel and tubewell
– understand the roles of dams, barrages, link canals, distribution canals, field channels and bunds
• explain the causes of waterlogging and salinity, and:
– explain how land damaged by it can be restored
– evaluate how agricultural practice and water management can be improved to prevent it happening
• understand how government action has helped to increase production through land reforms, the promotion of training and the use of machinery, chemicals, improved seeds and other means
• understand and evaluate the possibilities for and problems of the development of agriculture and its sustainability.

O/N18/P2/Q1

INSERT

Fig. 1.1 for Question 1

Fig. 1.2 for Question 1

Fig. 1.3 for Question 1

Fig. 1.4 for Question 1

(a) (i) Study Figs. 1.1, 1.2, 1.3 and 1.4 (Insert), photographs showing different crops growing in Pakistan.

Identify the crops shown in each photograph

Fig. 1.1 .....

Fig. 1.2 .....

Fig. 1.3 .....

Fig. 1.4 ..... [4]

(ii) State what any two of the crops shown in Figs. 1.1–1.4 are used for.

Name of crop .....

Use .....

Name of crop .....

Use .....[2]

(b) (i) Explain the ideal **natural** growing conditions needed to produce cotton. You should develop your answer.

.....

.....

.....

.....

.....

.....

.....

.....[4]

(ii) Describe how environmental factors can harm the cotton crop.

.....

.....

.....

.....

.....

.....

.....

.....[4]

(c) (i) Study Fig. 1.5, a map outline of Pakistan.

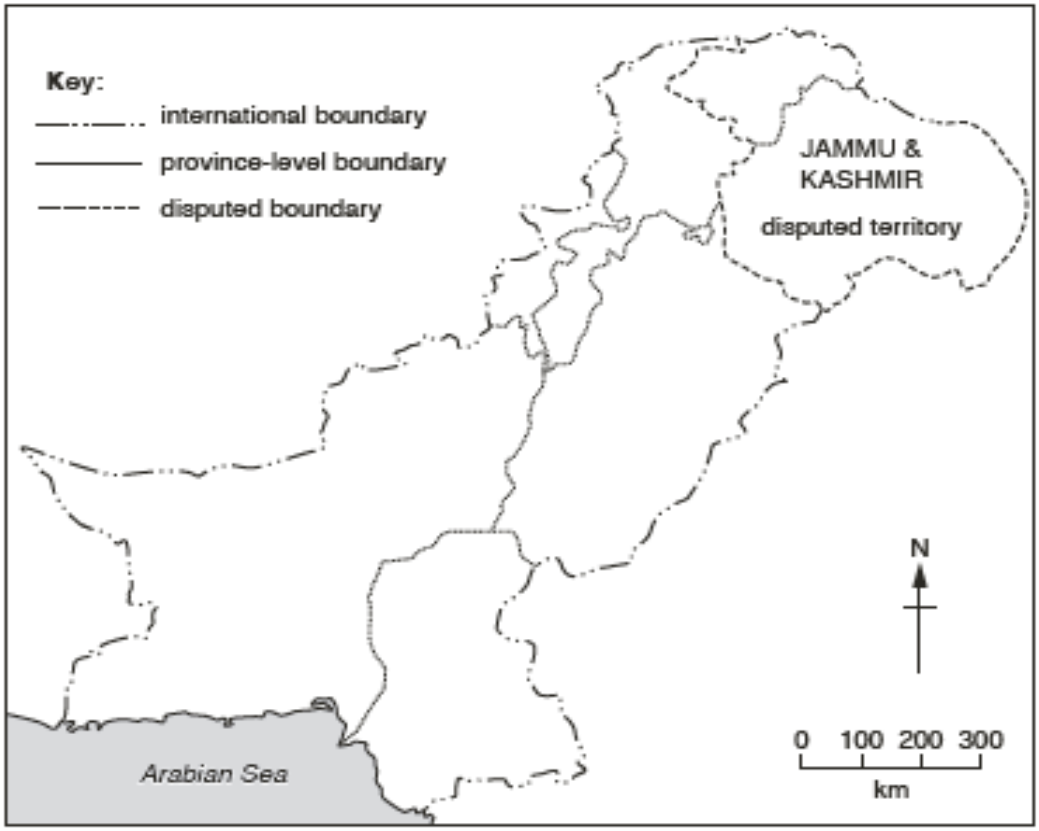


Fig. 1.5

On Fig. 1.5 shade and name the provinces where oilseeds are grown. [3]

(ii) State two reasons why oilseeds are grown in these provinces.

1 .....

.....

2 .....

.....[2]

(d) Pakistan is an agricultural country, yet a recent United Nations report placed Pakistan on a list of countries facing food shortage in the future. Read the following two views about ways to prevent future food shortages in Pakistan:

A

The best way to prevent food shortages is to increase food production for the domestic market.

B

The best way to prevent food shortages is to increase food imports for the domestic market.

Which view do you agree with more? Give reasons to support your answer and refer to examples you have studied. You should consider View **A** and View **B** in your answer.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[6]

[TOTAL: 25]

M/J18/P2/Q3

INSERT

Fig. 3.1 for Question 3

Fig. 3.2 for Question 3

(a) (i) Define the term 'livestock farming'.

.....

.....[1]

(ii) State **two** uses of livestock on farms.

1 .....

2 .....[2]

(b) (i) Study Fig. 3.1 and Fig. 3.2 (Insert), photographs showing different types of livestock.

Identify and name the type of livestock shown in each figure.

Fig. 3.1 .....

Fig. 3.2 ..... [2]

(ii) Name **two** products from the livestock shown in Fig. 3.1.

1 .....

2 ..... [2]

(iii) Describe the benefits of rearing the livestock shown in Fig. 3.1 and Fig. 3.2.

.....

.....

.....

.....

.....

.....[3]

(c) (i) Study Fig. 3.3, a map showing the main regions of Pakistan where buffalo are kept.

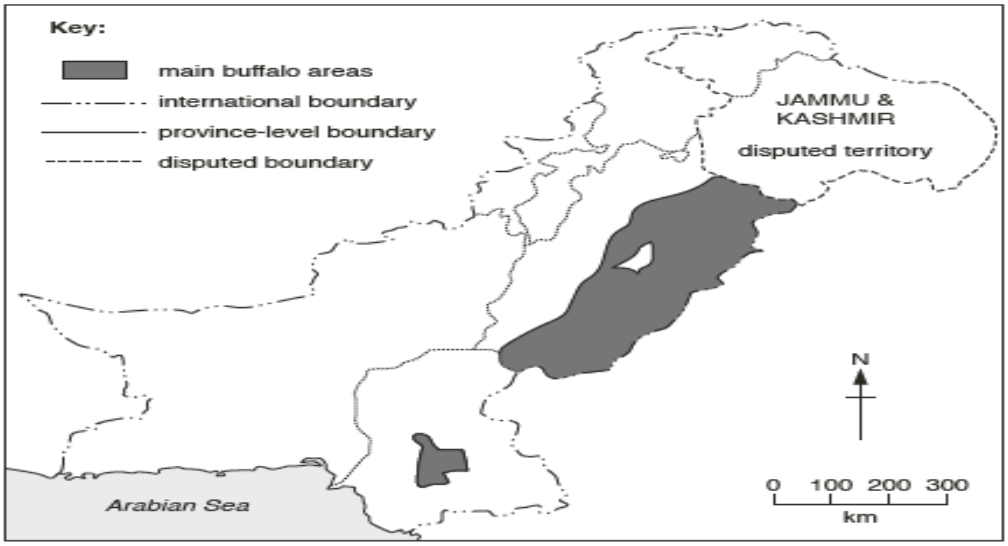


Fig. 3.3

Using Fig. 3.3 and your own knowledge, describe the distribution of buffalo in Pakistan.

.....

.....

.....

.....

.....

.....[3]

(ii) Suggest **two** reasons why buffalo are kept in these regions.

.....

.....

.....

.....[2]

(iii) Explain how **natural** factors can create problems for buffalo farmers. You should develop your answer.

.....

.....

.....

.....

.....

.....

.....

.....[4]

(d) The government has encouraged the growth of commercial poultry farming since 1964. There have been some challenges but different strategies have been introduced to further develop this type of farming in Pakistan.

Evaluate the extent to which commercial poultry farming in Pakistan has overcome its challenges and developed further. Give reasons to support your **judgement** and refer to examples you have studied. You should consider the challenges **and** the strategies used in your answer.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[6]

[TOTAL: 25]

O/N17/P2/Q3

(a) (i) A Name a species of fish reared on a fish farm.

.....

B Give **two** uses for the products of fish farms.

1 .....

2 .....[3]

(ii) Describe the methods used to rear fish on fish farms.

.....

.....

.....

.....

.....

.....[3]

(b) Study Fig. 4, which shows changes in farm size in Pakistan between 1980 and 2010.

Farm size hectares (ha)	Percentage of farms			
	1980	1990	2000	2010
Under 5	74	81	86	89
5–20	24	17	13	10
21 and over	2	2	1	1

Fig. 4

(i) In which year was the percentage of farms under 5 hectares (ha) the smallest?

.....[1]

(ii) Identify the **two** main changes in farm size over the whole period 1980–2010.

1 .....

.....

2 .....

.....[2]

(iii) Suggest a reason for **one** of the changes you have identified in (b)(ii).

.....

.....[1]

INSERT

Photograph B for Question 3

(iv) Explain how farm size can affect production on farms in Pakistan. You should develop your answer.

.....

.....

.....

.....

.....

.....

.....

.....[4]

(c) (i) Study Photograph B (Insert).

A Name the crop shown in this photograph.

.....

B Give **one** reason why this crop can be grown in many areas of Pakistan.

.....

.....

C Describe **one** natural requirement for a high yield of this crop.

.....

.....[3]

(ii) Sugar cane is an important crop grown in Pakistan. Suggest **two** reasons why there is an increased demand for this crop.

1 .....

.....

2 .....

.....[2]

(d)

> A huge area, 4–7 million hectares or one-fifth to one-third of the total agricultural area of Pakistan, has seen yields decreased or crops lost completely due to waterlogging and salinity.

Evaluate whether it is possible to prevent agricultural land being damaged by waterlogging and salinity. Give reasons to support your judgement and refer to examples you have studied. You should consider different points of view in your answer.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[6]

[TOTAL: 25]

M/J17/P2/Q1

1 (a) (i) What is meant by each of the following terms?

A Subsistence crop farming .....

.....

B Cash crop farming .....

.....[2]

(ii) From the list below, choose **one** example of a crop that is mainly grown as a subsistence crop and **one** that is mainly grown as a cash crop.

rice sugar cane oilseeds vegetables cotton wheat

Subsistence crop .....

Cash crop ..... [2]

(iii) What are the advantages and disadvantages of using High Yielding Varieties of crops?

Advantages	Disadvantages
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

[4]

(b) Study Fig. 1, which shows population growth rates for selected provinces over three time periods.

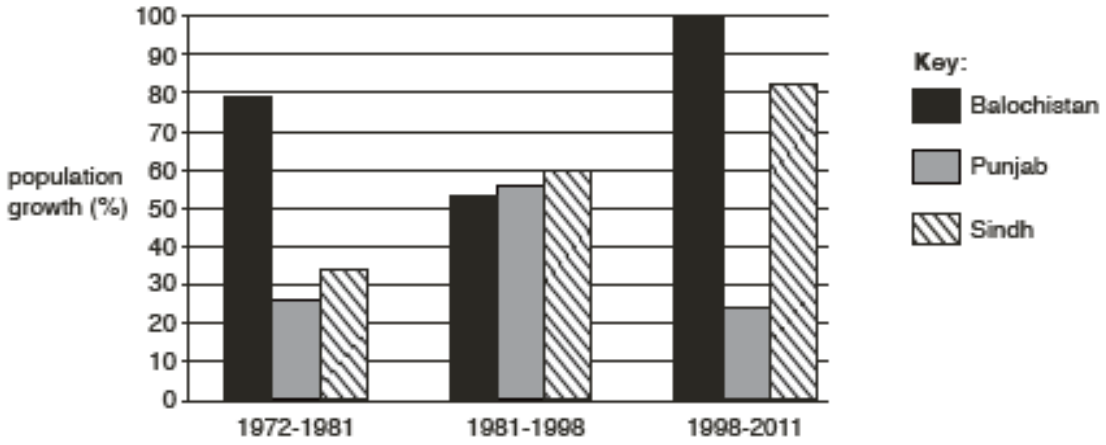


Fig. 1

(i) A What was the population growth rate for Punjab between 1972 and 1981?

.....

B Which province showed an increase in population growth rate in every period?

.....[2]

(ii) Identify one difference between the population growth rates of Balochistan and Punjab.

.....

.....[1]

(iii) Explain two factors which have contributed to population growth in Pakistan.
You should develop your answer.

.....

.....

.....

.....

.....

.....

.....

.....[4]

INSERT

Photograph A for Question 1

(c) Study Photograph A (Insert).

(i) Describe the type of farming shown in the photograph.

.....

.....

.....

.....[2]

(ii) How is the keeping of buffalo different from the type of farming in Photograph A?

.....

.....

.....

.....[2]

(d) Read the following two views about increasing food supply in Pakistan:

A

Development of the livestock sector is the best way to increase the amount of food available in Pakistan.

B

Increasing crop production and cultivable area is the best way of ensuring there is enough food in Pakistan.

Which view do you agree with more? Give reasons to support your answer and refer to examples you have studied. You should consider both View A and View B in your answer.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[6]

[TOTAL: 25]

O/N16/P2/Q4

(a) (i) Describe two human inputs used in the cultivation of cotton.

1 .....

.....

.....

.....

2 .....

.....

.....

.....[4]

(ii) Study Fig. 6 which is a graph showing the production of raw cotton in Pakistan over the period 1982–2014.

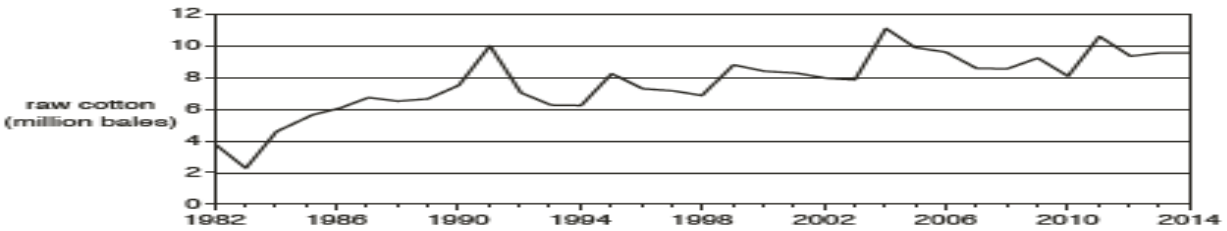


Fig. 6

A Describe the main changes in the production of raw cotton between 1982 and 2014.

.....

.....

.....

.....

.....

.....[3]

B Suggest three reasons for the production levels seen in the years 1991, 2004 or 2011.

1 .....

.....

2 .....

.....

3 .....

.....[3]

(b) Describe different ways in which governments can support farmers.

.....

.....

.....

.....

.....

.....

.....

.....[4]

(c) Study Fig. 7 which is a table giving information about agriculture in Pakistan over the period 1950–2010.

Year	Agriculture % share in labour force	Total cropped area (million ha)
1950	66	13
1960	59	15
1970	58	17
1980	53	19
1999	47	23
2007	48	24
2010	45	23

Fig. 7

(i) Describe the relationship between agricultural labour force and cropped area.

.....

.....

.....

.....[2]

(ii) Suggest reasons for the change over the period 1950–2010 for either labour force or cropped area, as shown in Fig. 7.

Choice .....

Reasons .....

.....

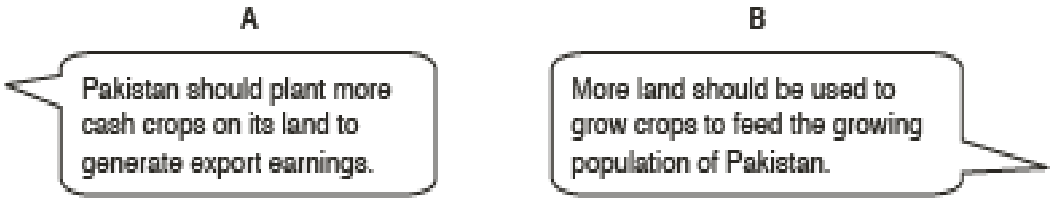
.....

.....

.....

.....[3]

(d) Read the following two views:



Which view do you agree with more? Give reasons to support your answer and refer to examples you have studied.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[8]

[TOTAL: 25]

M/J16/P2/Q2

(a) (I) Suggest **one** reason why farming is more productive on flat land.

.....

.....[1]

(II) Many processes are involved in rice cultivation. **In the boxes below**, place the following processes in the order in which they occur.

flooding sowing draining transplanting

1	ploughing
2	
3	
4	
5	
6	harvesting

[2]

(III) Explain how **one** of the processes you named in (II) is carried out on a small-scale subsistence farm.

Process .....

Explanation .....

.....

.....

.....

.....

.....[3]

(IV) Describe the natural factors needed to produce the highest yields of rice.

.....

.....

.....

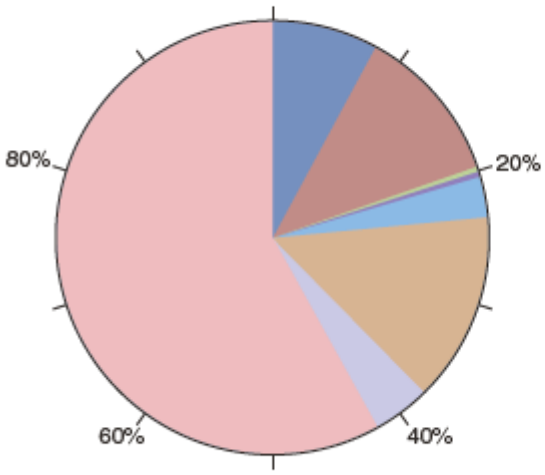
.....

.....

.....[3]

INSERT

Fig. 3 for Question 2



Key:

Sector	Category
Primary	crops
	A
	forestry
	fishing
	mining
Secondary	manufacturing
	other industry
Tertiary	B

(b) Study Fig. 3 (Insert) which gives information about the Gross Domestic Product (GDP) of Pakistan for 2014 by sector.

(I) State what might be in categories A and B in Fig. 3.

A .....

B .....[2]

(II) For one sector in Fig. 3 explain how its contribution to GDP could be increased.

Sector .....

Explanation .....

.....

.....

.....[2]

(c) Study Fig. 4 which gives information about the yields of three crops grown in Khyber Pakhtunkhwa (KPK).

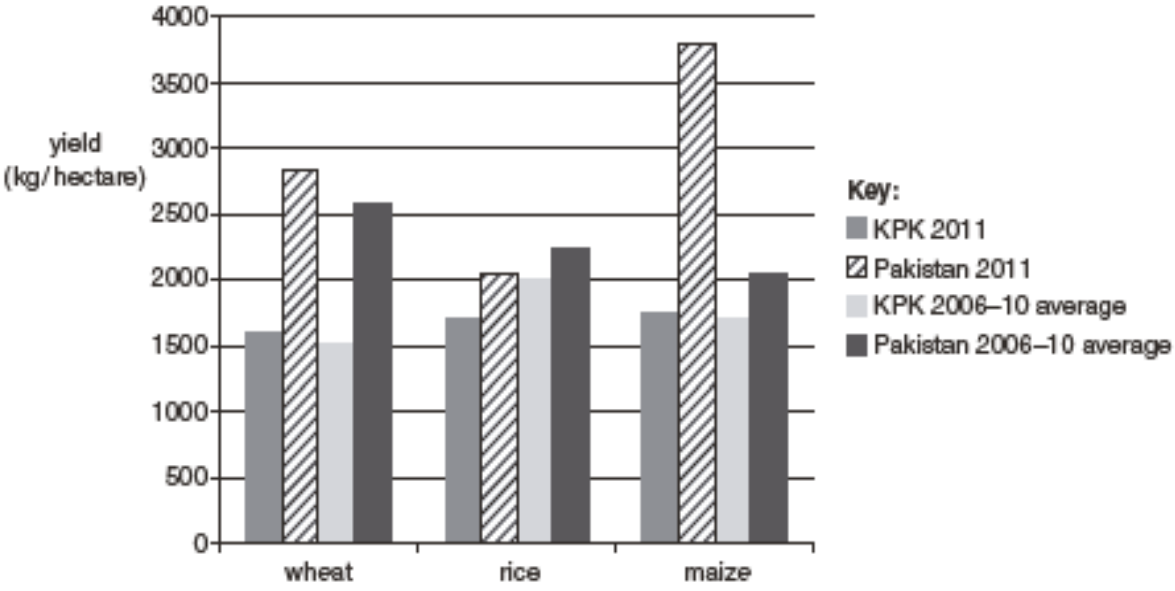


Fig. 4

(I) A. Which crop had the lowest yield in KPK on average over the years 2006–10?

.....

B. In 2011 what was the difference in maize yield between KPK and Pakistan?

.....[2]

(II) Using Fig. 4 and your own knowledge explain the problems for agriculture in KPK province.

.....

.....

.....

.....

.....

.....

.....

.....[4]

(d) Read the following article:

> The Lowari Tunnel is due to open in 2017. It is 8.6 km long and will give Chitral Valley its only all-weather road to the rest of Pakistan.
>
> For some in Chitral Valley this tunnel will be of real benefit but for others it will create problems.

To what extent does the Lowari Tunnel benefit or create problems for the local people and economy of Chitral? Give reasons for your answer.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[6]

[TOTAL: 25]

O/N15/P2/Q3

(a) Study Fig. 4 and Fig. 5, which give information for rice production and the area over which it is sown during four years.

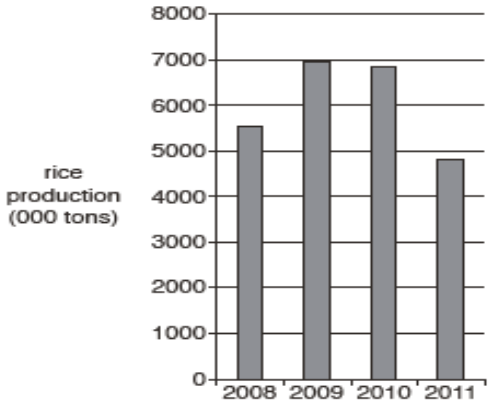


Fig. 4

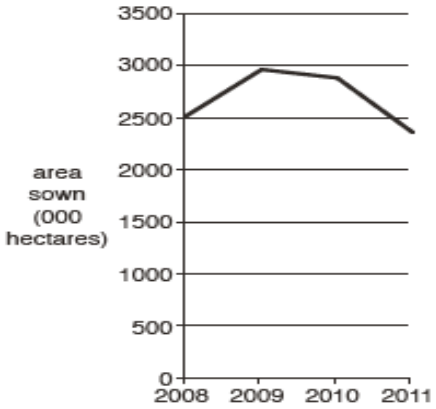


Fig. 5

(i) What was the production in 2008?

.....[1]

(ii) What is the difference between the maximum and minimum area sown during these years?

.....[1]

(iii) Suggest **two** reasons why rice production varies from year to year.

1 .....

2 .....[2]

(b) Study Fig. 6 which shows date and almond growing regions in Pakistan.

Fig. 6

(i) Describe the distribution of the areas where **almonds** are grown.

.....

.....

.....

.....

.....

.....[3]

(II) Why are the areas shown on the map suitable for growing **dates**?

.....

.....

.....

.....

.....

.....[3]

(III) Explain the difficulties in finding and reaching markets for almonds, dates and other fruit grown in Pakistan.

.....

.....

.....

.....

.....

.....

.....

.....[4]

(c) (I) Describe what is meant by 'subsistence farming'.

.....

.....

.....

.....[2]

(II) Explain why some farmers are subsistence farmers.

.....

.....

.....

.....

.....

.....[3]

(d) Explain why livestock is an important part of the agricultural sector. To what extent is it possible to develop livestock farming further in Pakistan?

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[6]

[Total: 25]

M/J15/P2/Q3(a)

(a) Study Fig. 6 which gives information about the area of Pakistan under cultivation.

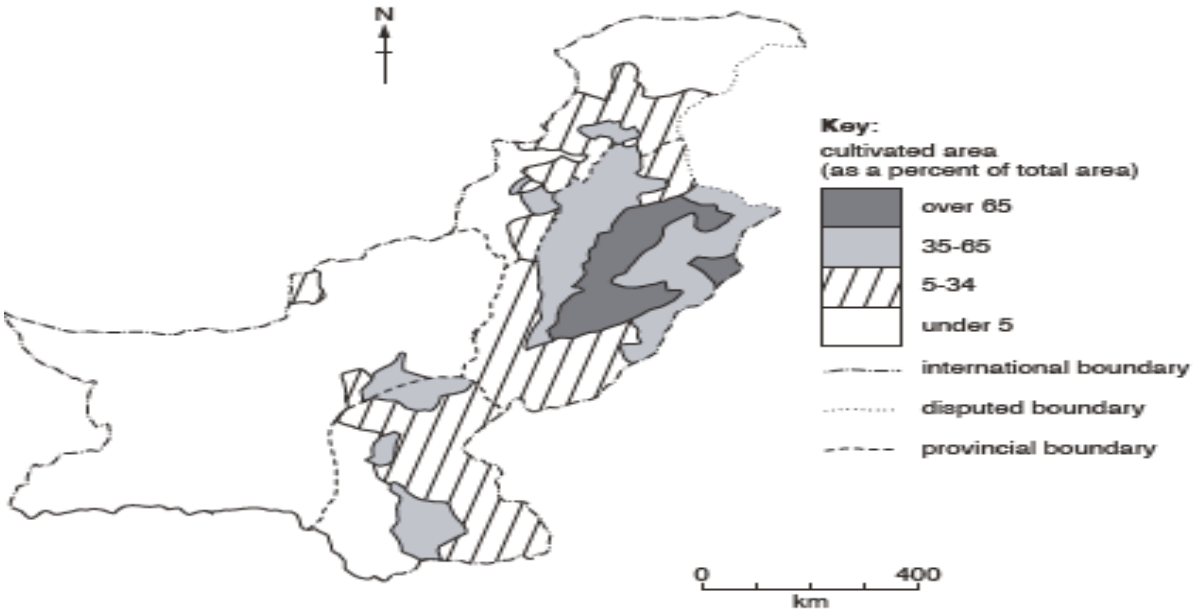


Fig. 6

(I) A. Name a district that has a cultivated area of over 65%.

.....

B. How much of Faisalabad District is cultivated?

.....[2]

(II) Suggest reasons why so many districts of Pakistan have a cultivated area of less than 5%.

.....

.....

.....

.....

.....

.....[3]

(III) Explain why agricultural land is no longer producing crops in many regions of Pakistan.

.....

.....

.....

.....

.....

.....

.....

.....[4]

O/N14/P2/Q3(b and c)

(b) (I) In the list below circle **three** inputs used mostly for cash crop farming.

ANIMAL DUNG	MANUAL LABOUR	CHEMICAL FERTILISER	HIGH YIELD SEEDS
DESI SEEDS	MODERN TRACTOR	WOODEN PLOUGH	

[3]

(II) Explain how each of the **three** inputs you have circled can increase crop yields.

1 .....

.....

2 .....

.....

3 .....

.....[6]

(c) (I) Explain what is meant by sustainable livestock farming.

.....

.....

.....

.....[2]

(II) To what extent can livestock farming increase food supply in Pakistan?
Explain your answer.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[6]

[Total: 25]

M/J14/P2/Q1

(a) Study Fig. 1, a graph showing wheat production and cultivation.

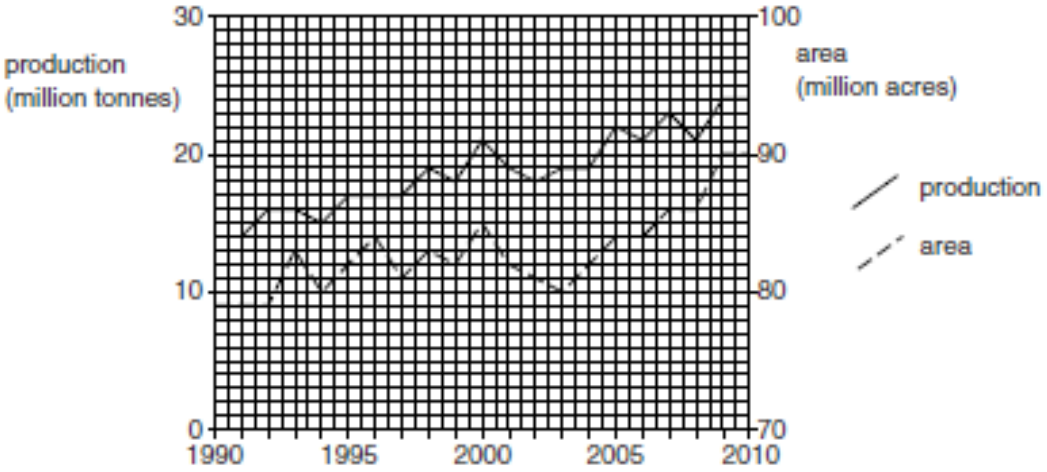


Fig. 1

(I) By how much did wheat production increase from 1991 to 2010?

.....[1]

(II) By how much did the area of wheat cultivation increase from 1991 to 2010?

.....[1]

(III) Compare the production of wheat from 1991 to 2000 with the production from 2001 to 2010.

.....

.....

.....

.....[2]

(IV) To what extent was the amount of wheat produced related to the cultivated area from 1991 to 2010?

.....

.....

.....

.....

.....

.....[3]

(b) **(I)** Circle the months in which most wheat is grown in Pakistan.

OCTOBER – MAY JUNE – SEPTEMBER [1]

(II) Explain why the climate at this time is most suitable for wheat farming.

.....

.....

.....

.....

.....

.....[3]

(c) Why are waterlogging and salinity called 'the twin menaces for farmers'?

.....

.....

.....

.....[2]

(d) Describe the ways in which damage by waterlogging and salinity can be prevented.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[6]

(e) To what extent can better education and training increase farm production?

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[6]

[Total: 25]

O/N13/P2/Q1

INSERT

Photograph A for Question 1

(a) Study Photograph A (Insert).

Name the irrigation system shown in the photograph and explain briefly how it works.

Name.....

How it works .....

.....

.....

.....

.....

.....[4]

(b) Study Fig. 1, a map showing the main sugar-cane growing areas.

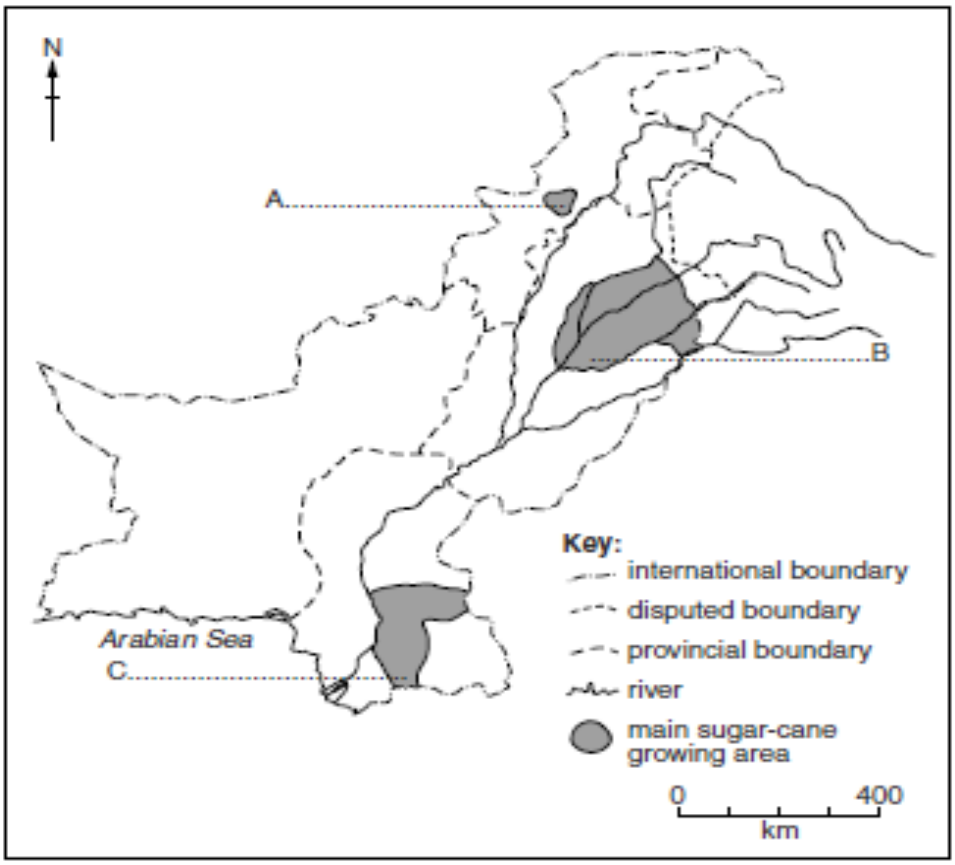


Fig. 1

Name on the map **one** city, town or district in **each** of the areas A, B and C. [3]

(c) (i) What is meant by the following terms?

Subsistence crop.....

.....

Cash crop.....

.....[2]

(ii) Describe the climate and soil conditions needed for growing sugar-cane.

Climate .....

.....

.....

.....

.....

.....

Soil .....

.....

.....

.....

.....

.....[4]

(d) (i) Give **two** reasons why sugar-cane factories should be built as close as possible to the fields where sugar-cane is grown.

1 .....

.....

2 .....

.....[2]

(ii) Name **two** by-products from sugar-cane processing and give a use of each of them.

1 ..... Use .....

2 ..... Use .....

[4]

(e) Name a cash crop, other than sugar-cane, grown in Pakistan. Explain the advantages and disadvantages of increasing its cultivation.

Name.....

Advantages.....

.....

.....

.....

.....

.....

Disadvantages.....

.....

.....

.....

.....

.....[6]

[Total: 25]

M/J13/P2/Q3

INSERT

Photograph B for Question 3

Photograph C for Question 3

Photograph D for Question 3

(a) (i) Study Photographs B, C and D (Insert).

Name the crops shown in each photograph and give a use of each within Pakistan.

	Name	Use
B	.....	.....
C	.....	.....
D	.....	.....

[3]

(ii) With reference to **one** of the crops named in **(a)(i)**, explain the meaning of the term cash crop farming.

crop .....

.....

.....

.....[2]

(b) (i) Place the following processes in the correct order.

SOWING SEEDS PLOUGHING HARVEST WEEDING

....

[1]

(ii) With reference to your answer to **(b)(i)** explain how rice is grown on small-scale farms in Pakistan.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[6]

(c) Study Fig. 4, which shows sugar cane production in Pakistan.

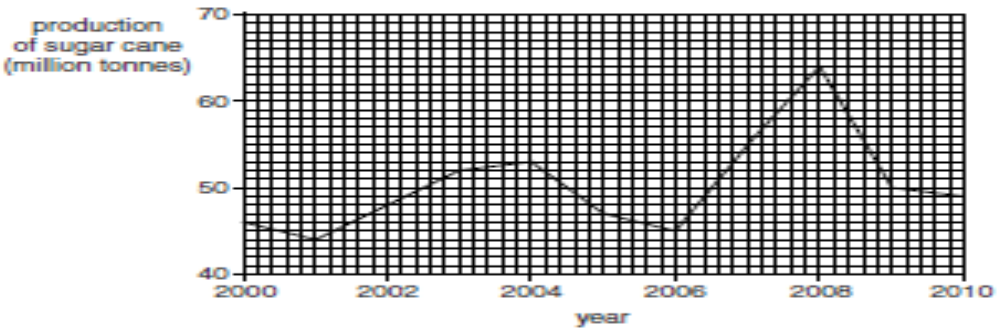


Fig. 4

(i) What was the highest annual production, and in which year did it occur?

production ..... year .....[2]

(ii) By how much did production decrease between 2008 and 2010?

.....[1]

12

(iii) Explain why the production of agricultural crops varies **from year to year.**

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[4]

(d) To what extent could the improvement of road, rail and air transport improve the distribution of food supplies in Pakistan?

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[6]

[Total: 25]

M/J13/42/Q3

(a) Study Fig. 5, which shows the climate of Multan.

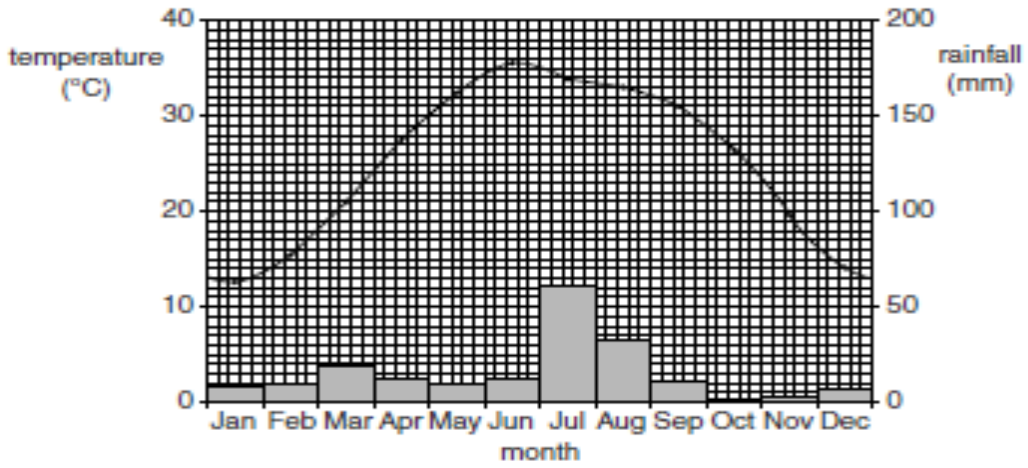


Fig. 5

(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]

(III) Cotton is the major cash crop grown in Pakistan. Label on Fig. 5:
- the month of sowing
- the months of growth
- the month of harvest

[3]

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

.....

.....

.....

.....

.....

.....

.....

.....

.....[4]

(b) Study Fig. 6, which shows the amount of cotton produced and the area used for this in Pakistan.

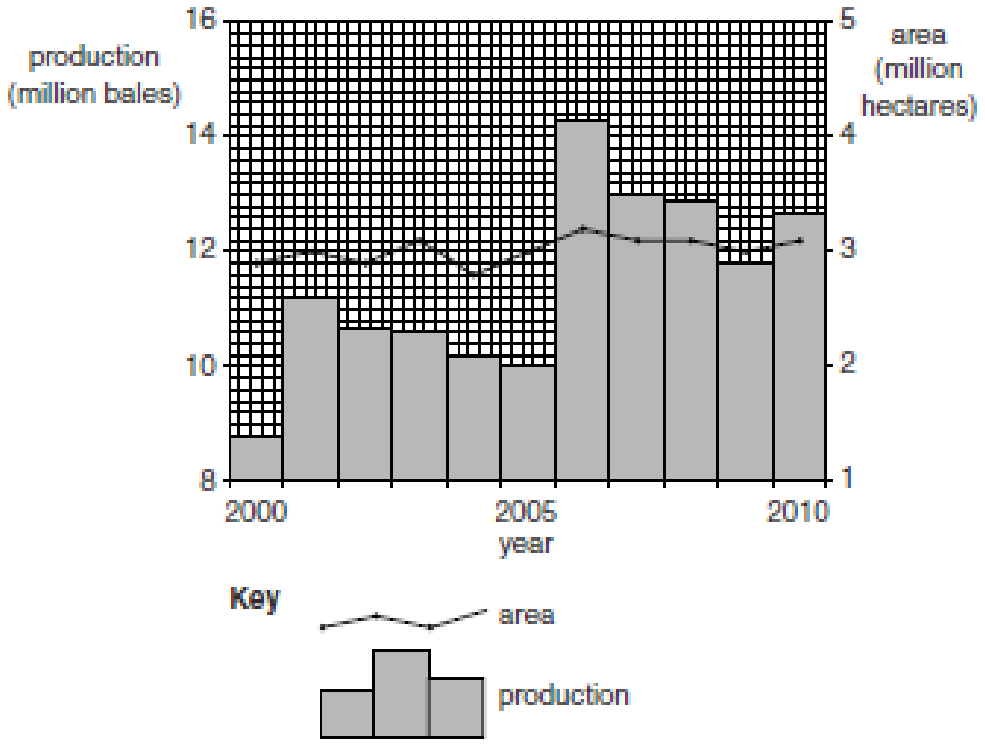


Fig. 6

(I) What was the highest annual production, and in which year did it occur?

production ..... year .....[1]

(II) Compare the change in cotton production with the change in area of land used between 2000 and 2010.

.....

.....

.....

.....

.....

.....

.....[3]

(c) How can the government help farmers to grow more cotton?

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [6]

O/N12/P2/Q3(b and c)

(b) Study Fig. 5 which shows the results of a land-use survey in Pakistan in 2008.

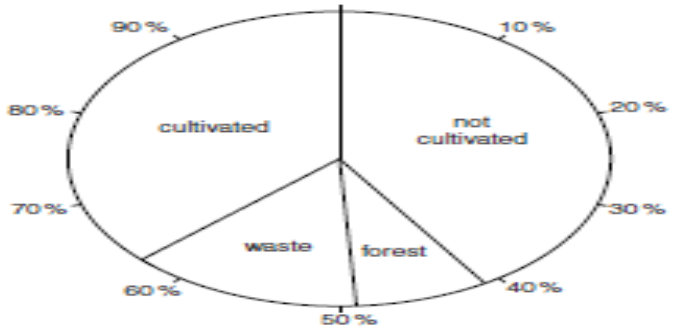


Fig. 5

(i) What percentage of land is cultivated?

.....[1]

(ii) What percentage of land is waste?

.....[1]

(iii) Explain how soils are damaged by waterlogging and salinity.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[4]

(iv) Explain **three** reasons, other than by waterlogging and salinity, why over half the land was not cultivated when the survey was made.

1 .....

.....

.....

.....

.....

2 .....

.....

.....

.....

.....

3 .....

.....

.....

.....

.....[6]

(c) To what extent could government action increase agricultural production in Pakistan?

[6]

[Total: 25]

M/J13/P2/Q3

(a) Study Fig. 4, which shows the climate of Sialkot.

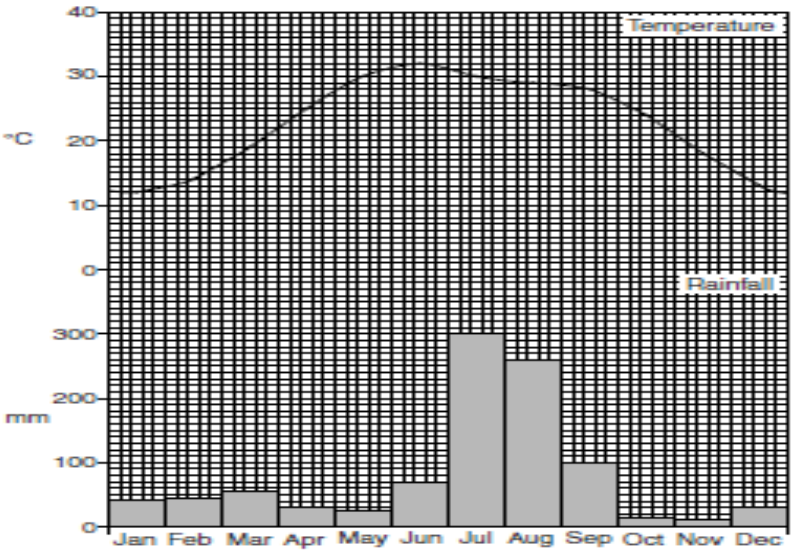


Fig. 4

(i) Circle and label on the x-axis:

A the month when rice would be planted,
B the months when it would be growing,
C the month when it would be harvested. [3]

(ii) Explain how canal irrigation is used and controlled to grow rice.

.....

.....

.....

.....

.....

.....

.....

.....[4]

(b) Study Fig. 5, which shows wheat production.

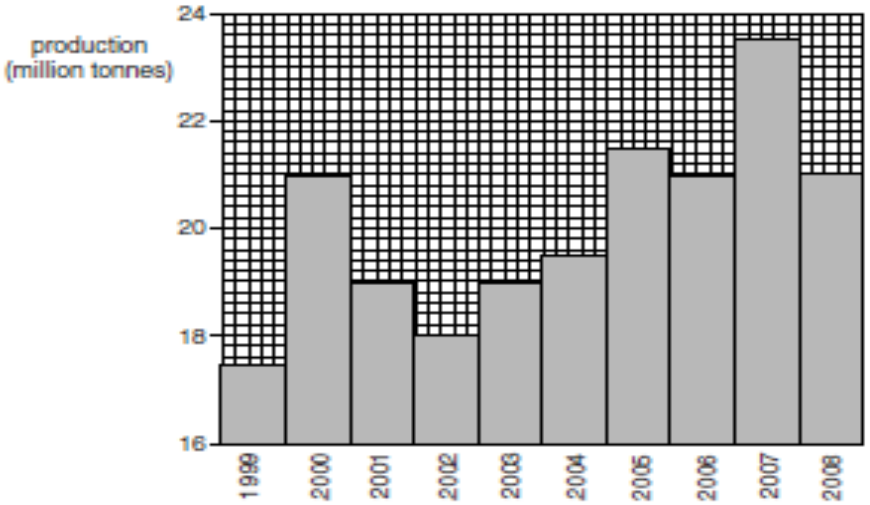


Fig. 5

(i) What was the production in 2008?

.....[1]

(ii) Compare this to the production of wheat in the years from 1999 to 2007.

.....

.....

.....

.....[2]

(iii) Suggest reasons for the changes in production over these years.

[4]

(c) To what extent is it possible to increase agricultural production by the use of modern methods?

[6]

Answer Key (Mark Scheme)

O/N18/P2/Q1

Question	Answer	Marks
1(a)(i)	Fig. 1.1 = Rice Fig. 1.2 = Sugar cane Fig. 1.3 = Cotton Fig. 1.4 = Wheat 4 @ 1 mark	4
1(a)(ii)	☐ Rice – used for exports / foreign exchange / food / flour; ☐ Sugar cane – making sugar / brown sugar / gur / fuel / by products or e.g. molasses / bagasse; ☐ Cotton – making clothes / soft furnishings / bed linen / making fibre / yarn / fabric; ☐ Wheat – making of bread and other baked products / feed for livestock / flour. 2 @ 1 mark	2
1(b)(i)	☐ Ideal temperature is 25–35 °C (e.g. so crop grows well / without these temperatures crop will not grow well); ☐ Mild (moderate) night time temperature / not too cold at night (e.g. so crop is not damaged or spoilt by frost); ☐ Dry sunny days (e.g. so harvest is productive / high yielding / ripening); ☐ 500–1000 mm rainfall / plenty (ample) of rainfall (e.g. to avoid extra irrigation / high yielding); ☐ (Medium) loam soil / loamy (e.g. fertile soil / high in nutrients / high yielding); ☐ Natural manure (e.g. cheaper / easily available / maintain fertility / avoid crop rotation / high yields); ☐ Flat land / level land / terraces (e.g. allows use of mechanisation / easy to plough, sow or harvest); Etc. **Note**: One mark for identification of appropriate idea and a further mark for development (in parentheses). **Note**: Max. 2 marks if no development. 2 @ 2 marks	4
1(b)(ii)	☐ Rain at harvesting time (will spoil the boll); ☐ Sensitive to frost; ☐ Leaf curl virus; ☐ Drought / lack of rainfall / lack of water; ☐ Flood / heavy rainfall; ☐ Sudden changes in temperature / too hot / too cold; ☐ Pest or insect attack; ☐ Strong winds; ☐ Salinity / waterlogging. 4 @ 1 mark	4

Question	Answer	Marks
1(c)(i)	Shade on the map **at least two** of the following provinces: Sindh, Punjab, KPK or Balochistan (must shade entire province) Name any two of the named provinces above accurately, i.e. in the correct location. 3 @ 1 mark	3
1(c)(ii)	☐ Tolerant of a range of climate conditions / can grow in a wide range of different climates / fertile soil or nutrient rich soil / flat land; ☐ Time of year (Rabi crop) / grown over winter; ☐ Land needed for more high value crops in summer; ☐ Irrigation system / water from river Indus; ☐ Domestic market or example; ☐ Industrial uses or example; ☐ Animal fodder. 2 @ 1 mark	2

Question	Answer	Marks
1(d)	**Levels marking** No valid response 0 **Level 1** 1–2 Simple point addressing any view (1) Simple points addressing any view (2) **Level 2** 3–4 Developed point(s) explaining one view (3) Developed point(s) explaining both views (4) No evaluation **Level 3** 5–6 Developed points explaining both views Evaluation giving clear support to one view or appropriate example (5) Evaluation giving clear support to one view and appropriate example (6) **Content Guide** Answers are likely to refer to: Increase food production for the domestic market: ☐ Positive ideas for improving wheat production as a staple food source for the population of Pakistan; ☐ Food is more important than producing cash crops; ☐ Do not want to rely on other countries for food imports; ☐ Incentives for farmers; ☐ People able to work as have more energy; ☐ Imported food is more expensive than home grown food; ☐ Wider variety of products grown domestically; ☐ Improve balance of payments / reduces imports; ☐ May provide more jobs in farming; ☐ Provide incentives to farmers to grow the oilseed rather than import it; Etc. increase food imports for the domestic market; ☐ Increase number of trade partners; ☐ Can use the land in Pakistan for producing higher value goods / crops for export; ☐ Wider variety of foods can be imported; ☐ Wider / more varied diets available; ☐ Can eat foods all year round e.g. do not have to wait for them to be in season; ☐ People can work in manufacturing or service industries which are higher paying and less labour intensive; ☐ Fewer people will need to be subsistence farmers; Etc.	6

M/J18/P2/Q3

3(a)(i)	☐ The rearing / taking care / feeding / keeping of animals. 1 @ 1 mark	1
3(a)(ii)	☐ Pulling a cart / draught power; ☐ Ploughing / preparing field / threshing; ☐ Irrigation / Persian Wheel; ☐ Milking; ☐ Herding; ☐ Carrying loads / transporting goods / people; ☐ Breeding; ☐ Producing of manure / (natural) fertiliser. 2 @ 1 mark	2
3(b)(i)	☐ Fig 3.1 – Cows / cattle; ☐ Fig 3.2 – Sheep / lambs. 2 @ 1 mark	2
3(b)(ii)	☐ Milk / cream / cheese / yoghurt / ghee; ☐ Meat / beef; ☐ Skin / leather. 2 @ 1 mark	2
3(b)(iii)	☐ Cattle / cows seen as pride / prestige for farmers; ☐ Can be reared in most areas / in arid areas / in marginal areas; ☐ Food source / meat for families / subsistence; ☐ Wool used to make clothes / rugs / leather to make belts / shoes; ☐ Animal products sold for money / profit / contributes to GDP / export ; ☐ Waste / manure fertilises land / manure burnt as fuel; ☐ Sheep are sure footed and can survive in mountainous areas; ☐ Do not need large grazing fields; ☐ Can eat thin grass; ☐ Sheep preferred over goats / sheep less likely to overgraze; ☐ Nomadic people can travel with their sheep / cattle / can use in transhumance / easy to move; ☐ Can use products all year round. 3 @ 1 mark	3
3(c)(i)	☐ Only in Sindh and Punjab; ☐ Mostly in a line along the eastern border of Pakistan / mostly in Punjab / in eastern Punjab; ☐ One region in south east / Central Sindh / around Hyderabad; ☐ Upper Indus Plain; ☐ Along rivers / canals / near named rivers; ☐ On flatter land / where land not rugged. 3 @ 1 mark	3

Question	Answer	Marks
3(c)(ii)	☐ Prefer to be in water most of the time / can cool down in water; ☐ Canal irrigated areas / areas where water plentiful; ☐ Lowland climate / mild temperature / where climate is not too extreme / cold / hot; ☐ Where higher demand for buffalo products / examples of products; ☐ Buffalo cannot climb hills / survive in mountainous / hilly areas / rugged landscape. 2 @ 1 mark	2
3(c)(iii)	Natural factors such as: ☐ Weather / climate – cannot tolerate cold weather so buffaloes die; ☐ Availability of water – like to spend most of their time in water, otherwise will dehydrate / give poor quality meat and milk; ☐ Topography – limits where buffalo can be reared; ☐ Poor soils – will produce poor quality grazing / buffalo become undernourished; ☐ Disease – cost of vaccination / vet fees; ☐ Flooding – results in drowning / loss of animals; ☐ Lack of tree cover – no shade for animals and farmer has to build sheds / plant trees. Etc. **Note:** One mark for identification of appropriate idea and a further mark for development (in parentheses). **Note:** Max. 2 marks if no development. 2 @ 2 marks	4

Question	Answer	Marks
3(d)	**Levels marking** No valid response 0 **Level 1** 1–2 Simple point addressing any challenge or strategy (1) Simple points addressing any challenge or strategy (2) **Level 2** 3–4 Developed point(s) explaining one challenge or strategy (3) Developed point(s) explaining any challenge and strategy (4) No evaluation **Level 3** 5–6 Developed points explaining challenges and strategies Evaluation giving clear support to one challenge or strategy or appropriate example (5) Evaluation giving clear support to one challenge or strategy and appropriate example (6) **Content Guide** Answers are likely to refer to: <u>Challenges</u> Increased demand for poultry products – reasons for this, e.g. increased population / preference for white meat; Diseases; Air pollution / methane; High production costs / feed; High prices of meat / falling demand; Power shortages; Closure of farms; Ban on poultry export to Afghanistan. <u>Strategies</u> Government help through; Improving power supply; Legislation / guidelines for rearing poultry; Securing international markets / free trade agreements; Vaccination programmes to prevent disease; Incentives for farmers; Lowering price of feed; Use of poultry manure for fertiliser / in fish farms. Etc.	6

O/N17/P2/Q3

Question	Answer	Marks
3(a)(i)	A ☐ Trout: brown / rainbow / Palla / Thalla / Catfish; ☐ Carp: Mahseer (Mahasher) / rahu / grass / silver / catla / mrigal. 1 @ 1 mark B ☐ Animal / poultry feed; ☐ Local consumption / sold in local markets / fulfil requirements / food supply; ☐ Source of protein; ☐ Fish oil extracted / used in medicine; ☐ Fish fertiliser / manure; ☐ Export; ☐ Breeding / saving species from extinction. 2 @ 1 mark	3
3(a)(ii)	☐ Rectangular / man-made ponds; ☐ Lined / concrete base / cemented endings; ☐ Fill pond with water; ☐ Add fish or stock / nursery/ different fry, juveniles, etc.; ☐ Selective breeding programme; ☐ Trees planted on farms [to prevent losses from evaporation / for shade]; ☐ Water enriched with nutrients / fertilised with manure / from poultry droppings [for growth of plankton]; ☐ Feed added to water / food provided; ☐ Water filtered / changed / refilled / health and hygiene checked or maintained / chemicals or medicine to prevent disease. 3 @ 1 mark	3
3(b)(i)	1980 1 @ 1 mark	1
3(b)(ii)	**Changes** Under 5 / (74 to 89) increases 5–20 / (24 to 10) decreases 21 and over / (2 to 1) decreases/halved 2 @ 1 mark	2

Question	Answer	Marks
3(b)(iii)	**Reasons** Under 5 / (74 to 89): Increasing sub-division of family plots because of inheritance laws; Increasing population causing pressure on land 5–20 / (24 to 10): Redistribution of landlord holdings / land reform reducing landlord holdings / consolidation of holdings 21 and over / (2 to 1): Continues to represent a minority of farms in Pakistan / agriculture in Pakistan primarily subsistence 1 @ 1 mark	1
3(b)(iv)	For smaller farms: accept converse for larger farms: ☐ Higher proportion wastage / longer time to harvest (since less able to use machinery / difficult to manoeuvre machinery); ☐ Shorter / restricted / reduced harvest time (as more likely to / can only afford to rent rather than buy machinery / tractors); ☐ Less able to grow crops for sale / less able to produce quality crops (as large land needed for monocultures / efficient / economic production); ☐ Less able to invest in development of farm (as less likely to be able to obtain loans); ☐ Crops less well irrigated and lower yields (as cannot afford / do not have modern irrigation / tubewells); ☐ Higher yields / output per ha (since farming is intensive / intensive use of labour); ☐ Small farms – smaller amount of crop produced than larger farms (mainly subsistence, so less for sale). For larger farms: ☐ Farming inefficient or not all of land cultivated (Zamindari system provides less incentive as large landlords are absent / workers are landless); ☐ Larger farms – larger amount of crop can be produced than smaller farms. ETC. **Note:** One mark for identification of appropriate idea and a further mark for development (in parentheses). **Note:** Max. 2 marks if no development. 2 @ 2 marks	4

Question	Answer	Marks
3(c)(i)	A Millet / jowar / bajra B • Will grow in dry / semi-arid / barani areas / few irrigation facilities; • Will grow in poor / sandy soil; • Has a short growing season; • Flat land available / on marginal land. C Soil – one of: well drained, light, sandy, alluvial, loamy, not waterlogged Climate – one of: warm / 21–30 °C, frost free, low rainfall / 200–1000 mm 3 @ 1 mark	3
3(c)(ii)	• Rapid increase in population; • Increase in per capita consumption of sugar; • Export of (raw) sugar; • Raw material for other industries – waste material – Bagasie (cardboard / chipboard / paper animal feed) / molasses (cattle feed / citric acid) 2 @ 1 mark	2

Question	Answer	Marks
3(d)	**Levels marking** No valid response (0 marks) **Level 1** (1–2 marks) Simple point addressing any view (1) Simple points addressing any view (2) **Level 2** (3–4 marks) Developed point(s) explaining one view (3) Developed point(s) explaining both views (4) No evaluation **Level 3** (5–6 marks) Well-developed points explaining both views. Evaluation giving clear support to one view or appropriate example (5) Well-developed points explaining both views. Evaluation giving clear support to one view and appropriate example (6) **Content Guide** Answers are likely to refer to: <u>Possible</u> • Leaving part of the land fallow; • Line / temporary closure of canals; • Install tubewells; • Planting eucalyptus trees; • Digging surface / sub-surface drains; • Removing salts by adding gypsum; • Salinity Control and Reclamation Project; • Cultivating salt tolerant crops / use saline land for livestock. <u>Not possible</u> • Cost of maintaining / replacing tubewells / other measures; • Farmers continue to over-irrigate; • SCARP projects date from 1958 and large public tubewells deteriorating / reaching end of their life; • Lack of access to / cannot afford water; • Massive investment needed. ETC.	6

M/J17/P2/Q1

Question	Answer	Marks
1(a)(i)	A Crops grown for own consumption/use/for the farmer and his family/use it for themselves; B Crops grown for sale/export/income/profit/grown commercially. 2 @ 1 mark	2
1(a)(ii)	Subsistence: Rice/vegetables/wheat; Cash: Rice/sugar cane/oilseeds/cotton/wheat. 2 @ 1 mark	2
1(a)(iii)	Advantages □ Yields increased/increased output/higher yields; □ Allows double/multi-cropping/can use smaller/less land so more productive/crops grow faster/faster growth; □ Increased income/can sell surplus for profit/higher profits; □ Consistent quality of crops/better quality/healthy growth; □ Meets requirements of international standards; □ Protects against/more resistant to pests; □ Protects against/more resistant to disease; □ HYV crops, shorter/stronger and can withstand strong winds (therefore less damage); □ Drought resistant. Disadvantages □ Seeds have to be bought every year/cannot sow seeds produced from crops grown; □ Exhausts soil/can cause soil to lose its fertility/soil infertile; □ Expensive/poor farmers cannot afford them; □ Extra named input required, e.g. water/fertilisers; □ Not seen as a healthy crop/artificial/genetically modified; □ Lowers species diversity; □ Shortfall in skills/knowledge to use them/needs training. **Note:** Reserve one mark for each of advantage and disadvantage. 4 @ 1 mark	4
1(b)(i)	A 27% (allow 26–28%) B Sindh 2 @ 1 mark	2

Question	Answer	Marks
1(b)(ii)	□ Balochistan increases and Punjab decreases; □ When population growth is higher in Balochistan it is lower in Punjab and vice versa; □ Balochistan falls in 81–98 then rises in 98–11/moves from lower growth to higher growth whereas Punjab rises in 81–98 then falls in 98–11/moves from higher growth to lower growth; □ Balochistan lowest in 81–98 whereas Punjab highest in 81–98; □ Balochistan higher in 98–11 than 72–81/overall increase in growth: Punjab lower in 98–11 than 72–81/overall decrease in growth; □ Balochistan higher than Punjab in 72–81/98–11/Punjab higher than Balochistan in 81–98; □ Balochistan has a growth rate of more than 50% whereas Punjab has 25–55%. **Note:** any one correct statement. Can accept converse. 1 @ 1 mark	1

Question	Answer	Marks
1(b)(iii)	**Economic factors:** □ Children are an important part of the labour force (children needed to work on the land); □ Desire for sons (as an insurance policy in old age/ill health); □ Increase in food production (due to better farming methods); □ Better transportation system (to move doctors/food to where it is needed most); □ Cannot afford contraceptives. **Social factors:** □ Early marriage/multiple marriages (increases the span for reproductivity); □ Limited acceptance of birth control/lack of family planning clinics/education about family planning; □ Religious beliefs (Allah gives Rizq/believe holy prophet wanted the nation to increase in size); □ Large families seen as a matter of pride/desire for large families; □ Low levels of literacy/lack of education (people are not educated about the pitfalls of large families/women are illiterate); □ Lack of contraceptives/access to contraceptives/knowledge of contraceptives; □ People living longer/higher life expectancy/ageing population. **Political factors:** □ Increased availability of healthcare/medical facilities, (e.g. vaccinations/more hospitals/numbers of doctors/ use of antibiotics/other life-saving drugs); □ Decrease in child mortality (due to improvements in the quality of medical facilities and/or access to them); □ Death rates have decreased (due to control of diseases, e.g. malaria or other named disease/due to modern health facilities); □ Improvement in sanitation/water supply (reducing spread of diseases like typhoid/cholera or other named disease); □ Change in governments (hinders implementation of population welfare programmes to reduce population growth); □ The hosting of large numbers of Afghan refugees/more people moving to Pakistan from neighbouring countries/immigration ETC. **Note:** One mark for identification of appropriate idea and a further mark for development (in parentheses). **Note:** Max 2 marks if no development. 2 @ 2 marks	4

Question	Answer	Marks
1(c)(i)	□ Nomadic herdsmen/farming/nomadism/have to keep on moving/transhumance/need to move constantly/moves from high to lowland for winter and in summer move back; □ Herds/flocks of animals/taking care of animals/livestock/ sheep/goats/grazing/pasture/water. **Note:** Reserve 1 mark for type of farming a further mark is for description. 1 @ 2 marks	2
1(c)(ii)	□ Kept singly for domestic use; □ Can be kept in urban areas/on the edge of urban areas; □ Kept in sheds/small yards; □ Need to remain in water/need large amounts of water/where water is available/need to be kept near water/near rivers/marshy land; □ Kept in canal/irrigated areas of Sindh/Punjab; □ Buffalo are kept in one place/settled livestock/requires a permanent settlement. 1 @ 2 marks	2

Question	Answer	Marks
1(d)	Levels marking Level 1 (1–2 marks) Simple point addressing any view (1). Simple points addressing any view (2). Level 2 (3–4 marks) Developed point(s) explaining one view (3). Developed point(s) explaining both views (4). No evaluation. Level 3 (5–6 marks) Developed points explaining both views. Evaluation giving clear support to one view or a named example (5). Developed points explaining both views. Evaluation giving clear support to one view and a named example (6). Content Guide: Answers are likely to refer to: For livestock □ Large multi-national farms □ Bigger source of protein □ Source of milk/ghee/meat □ Sheep/goats can survive on marginal land Against livestock □ Insufficient land for fodder crops □ Inadequate storage facilities □ Lack of grazing land □ Overgrazing □ Lack of funds □ Unhygienic husbandry For food crops □ More land can grow food for people □ Well-developed irrigation □ Multi-cropping □ Access to fertilisers/pesticides, etc. Against food crops □ Mismanagement □ Overuse □ Of water/seepage from canals □ Over-cultivation ETC.	6

O/N16/P2/Q4

4 (a) (i) Describe two human inputs used in the cultivation of cotton. [4]
Labour (people) – picking / ploughing / sowing, etc. / mainly women / paid at low rate
Machinery / appropriate example of machinery (e.g. tractors) – picking / quick process
Pesticides / insecticides – prevent disease and damage to the crop
Fertilisers – larger size of cotton boll / for high yields
Irrigation – 1 month and 3 months after sowing / when rainfall is lacking
HYVs – Nayyab / 78 / B-557 / 149-F / resistance to leaf-curl virus / humidity tolerant / less sensitive to temperature
Capital / investment / finance – purchase machinery, seeds, fertiliser, pay labour
Government loans / subsidies – purchase of machinery, seeds, fertiliser
Knowledge – shape of the land, soil type, aspect, weather patterns
Traditions – farming methods handed down over generations
Maximum of 2 + 2 *(mark for a named input + mark for detail)*
(ii) Study Fig. 6 which is a graph showing the production of raw cotton in Pakistan over the period 1982–2014.
A Describe the main changes in the production of raw cotton between 1982 and 2014. [3]
Overall increase
Overall fluctuation
Significant rises: 82/83 to 91/92 / 94 to 04
Significant falls: 91/92 to 94/95 / 04 to 07/10
Maximum of 1 mark for use of data
B Suggest three reasons for the production levels seen in the years 1991, 2004 or 2011. [3]
Ample / plenty of / no shortage of rainfall / irrigation
No / little rain at harvest, no flooding
No / little frost / mild night temperatures
No / few insect attacks / diseases
Greater use of fertilisers, HYVs
Greater use of insecticides and pesticides
Government incentives / policies e.g. need to produce more food, increased availability of loans
(b) Describe different ways in which governments can support farmers. [4]
Providing / maintaining large irrigation schemes / dams / canals
Providing solutions for waterlogging and salinity, (such as SCARP, tubewell linings, etc.)
Developing HYV seeds (on government farms / collaboration with MNCs)
Plant protection programme / aerial spraying / advising on pesticides and treatment methods
Offering loans (for machinery / tubewells / fertilisers / pesticides / seeds / labour costs)
Veterinary care
Livestock research (on government farms)
Redress after flood / natural disaster
Land reform
Educating / training farmers (on use of HYVs / modern farming methods / sustainable methods / organic farming)
Further development / increased production of fertiliser industries
Providing weather forecasts
(c) Study Fig. 7 which is a table giving information about agriculture in Pakistan over the
period 1950–2010.
(i) Describe the relationship between agricultural labour force and cropped area. [2]
As labour force decreases, area increases / negative correlation / inverse relationship - *1*

mark
Use any four statistics to illustrate above statement, e.g. 'Labour was 66% whereas area was 13 ha then later when labour was 45% the area was 23 ha' - *1 mark*
(ii) Suggest reasons for the change over the period 1950–2010 for either labour force or cropped area, as shown in Fig. 7. [3]
Labour force
Mechanisation of farms
Rural to urban migration
Alternative work / occupations / factory work / informal sector work in urban areas
Higher paid work in urban area
Education and learning more / wider skills
Cropped area mark
force and cropped area.
–2011.rs.gs on expensive imports of fuels.
Reclamation of desert
More areas irrigated
Deforestation
Soil improved by fertilisers
Greater demand for food crops / commercial crops
(d) Read the following two views:

Indicative content (development of points in parentheses)
Cash crops
For
Income (balance of payments / trade deficit / debt / imports greater than exports)
Can bring high profits
Benefits from government incentives (e.g. support prices / development of new seeds)
Access to loans for modern / expensive inputs (e.g. fertilisers / pesticides / machinery / HYVs)
Examples: wheat, rice, cotton, sugar cane, tobacco, oilseeds
Economies of scale on large holdings / single crops
Against
Many farmers cannot afford cost of modern agricultural methods in cash crop farming
Cash crops are monocultures (vulnerable to disease / uses chemical inputs such as fertilisers / pesticides which can pollute water)
Food crops
For
Population growing rapidly (1.6% per annum)
Increasing demand for food
Fertile land becoming scarce (due to waterlogging and salinity / desertification / soil erosion / over cultivation)
Saves expensive imports of food / reduces import bill
Can be grown on subsistence farms / at low cost (using traditional methods / implements / family labour / small holdings)
Examples: rice, millet / bajra, sorghum / jowar, maize, fruit, vegetables
Against
Farmers growing only food crops / subsistence farmers do not make enough income / profit to invest in improving their farms for more output
Development may progress at a slow rate if subsistence farming increases – people will be occupied in providing food and not working in other sectors
Not all families may have access to fertile land
May not have the skills to grow own food
If adverse weather conditions affect many farms – could result in famine – if Pakistan imports
food the population can still be fed

M/J16/P2/Q2

2 (a) (i) Suggest one reason why farming is more productive on flat land.
Ease of ploughing/sowing/harvesting/cultivation/use of farm machinery
Water is retained
Easier/possible to irrigate
Soil not washed away
Terracing not necessary
(ii) Many processes are involved in rice cultivation. In the boxes below, place the following processes in the order in which they occur. [2]
2 Sowing
3 Flooding
4 Transplanting
5 Draining
(iii) Explain how one of the processes you named in part (ii) is carried out on a smallscale
subsistence farm. [3]
Manual labour
Family workers/farmer himself
Draught animals/bullocks
Limited use of machinery / simple tools / shaduf / Persian Wheel / unlined canals
Specific factors Max 2 Factors for ploughing/harvesting = 0
Sowing into beds/nurseries
Bunds/terraces constructed in main fields
Water diverted from rivers/unlined canals
Main fields flooded to 30–37cm/ 12–14”
Transplanted into prepared/weeded fields
When 20–25cm/ 8–10” high
Bunds breached [to drain fields]
Lowest terrace breached/drained first
(iv) Describe the natural factors for producing the highest yields of rice. [3]
High/heavy/ample/abundant/plentiful rainfall / 1270+mm
Dry for harvest
Warm temperature / 20–35C / no cold season
Level/flat land
Loam/clay soil / impervious sub-soil / water retentive
(b) Study Fig. 3 (Insert) which gives information about the Gross Domestic Product (GDP)
of Pakistan for 2014 by sector.
(i) State what might be in categories A and B in Fig. 3. [2]
A: Livestock/named livestock
B: Services /named service/named employment in service industry
(ii) For one sector in Fig. 3 explain how its contribution to GDP could be increased. [2]
Primary
Improve irrigation to increase area under crops
Develop further modern methods of agriculture e.g. mechanisation/fertilisers/pesticides/HYVs
Land reforms/consolidation
Government schemes e.g. plant protection programmes / credit/loans to buy farm machinery
More agricultural training college to increase skills
[Foreign]Investment in livestock facilities/husbandry
[Foreign] investment in exploration/extraction of natural resources
Afforestation projects
Modernisation of fishing fleet

Secondary
Expand Industrial Estates/Special Industrial Zones
Government organisations to promote small scale/cottage industries / loans to small industry owners / technical service/development centres
Attract foreign/private investment for business start-ups
Promote training courses in business/technology
Introduce hi-tech/modern machinery
Higher quality control of finished goods
Tertiary
Improve security to attract tourists
Develop telecommunication network
More publicity/marketing
Government organisations to promote tourism/call centres
Improved IT/business skills training
Setting up schools / colleges / education/training centres / hospitals

(c) Study Fig. 4 which gives information about the yields of three crops grown in Khyber Pakhtunkhwa (KPK)

(i) A: Which crop had the lowest yield in KPK on average over the years 2006–10?
B: In 2011 what was the difference in maize yield between KPK and Pakistan? [2]

A: Wheat
B: 2050 kg/ha / accept 1950–2150 kg/ha

(ii) Using Fig. 4 and your own knowledge explain the problems for agriculture in (KPK) province. [4]

KPK yields [always] less than for Pakistan [as a whole]/rest of Pakistan/other provinces
Too cold in winter [for growth] / severe weather in winter / frost damage
Too hilly/mountainous/terrain too rugged [for large fields] / barren / thin/infertile soils / prone to soil erosion (farm processes less efficient)
Terracing needed (high cost and much labour for construction/maintenance)
Irrigation difficult/few rivers
Remote from large centres of population/markets (making commercial farming difficult)
Poor infrastructure for transport of farm goods (kacha roads / passes blocked by landslides)
Terrorism/insurgencies
Lack of government interest (preventing access to modern techniques in agriculture)

(d) Read the following article:

Benefits
Chitral valley no longer cut off from the rest of Pakistan for 6 months per year.
Access by road in winter when Lowari Pass closed by snow
Avoids travelling into Afghanistan and back into Pakistan (the only natural winter route)(this route not available since 2009 due to presence of militants)
Shortens duration of journey to Peshawar by half (7 hours instead of 14 hours)
Greater access to hospital/university/airports (in Peshawar and Islamabad)
Greater access for trade
Greater access for tourists/higher income from tourism
Allows greater provision of services/food in winter
Stimulates industrial development/employment
Problem
Too many visitors (commercialisation of culture)
Young/ males likely to migrate (seasonally to urban areas)
Maintenance cost
Ease of movement for terrorists / a terrorist target
Increase in air pollution from exhaust fumes (which creates breathing difficulties)

Opens area to competition in foreign goods
Loss of scenic beauty
Ongoing debt (increasing local taxation)

O/N15/P2/Q3

3 (a) Study Fig. 4 and Fig. 5, which give information for rice production and the area over
which it is sown during four years.
(i) What was the production in 2008? [1]
5 600 000 tons / 5.6 million tons Accept 5 500 000 – 5 700 000
(ii) What is the difference between the maximum and minimum area sown during these years? [1]
600 000 hectares Accept 570 000 – 630 000
(iii) Suggest two reasons why rice production varies from year to year. [2]
Varies with area sown/direct correlation with area sown
In low years droughts/floods/too cold/rain too heavy/unreliable
In high years favourable weather
If neither of above two lines accept: 'rainfall varies'
Pest attack
Rice price/whether support price
Demand = 0
(b) Study Fig. 6 which shows date and almond growing regions in Pakistan.
(i) Describe the distribution of the areas where almonds are grown. [3]
Central Balochistan / Khuzdar/Kalat/Mastung
N/NE Balochistan / Pishin/Zhob/Qila Saifullah/Loralai/Kohlu/Barkhan/Musa Khel
S/SW KPK/FATA / S Waziristan
Near boundary of Balochistan and KPK/Waziristan/FATA
Upper/lower = 0
(ii) Why are the areas shown on the map suitable for growing dates? [3]
Close to R. Indus in Punjab/Sindh
In oases [in Balochistan]
[In Bolochistan] where irrigated by Karez from the foothills
If none of above three lines accept: 'close to a water source'
Can withstand dry conditions found in these areas/have deep roots/do not require much water/rainfall
Can be grown in hot regions/is a tropical fruit/where large temperature fluctuations/can withstand high temperatures
'Suits'/'likes' = 0 Warm = 0 Soil = 0
(iii) Explain the difficulties in finding and reaching markets for almonds, dates and other fruit grown in Pakistan. [4]
Poor [cold] storage facilities (and fruit is a perishable good)
Poor named infrastructure e.g. roads/ports/transport system (causing delays and wastage of product))
Lack of processing/packaging facilities(therefore not accepted in international markets)
Lack of quality control (e.g. mangoes not treated for pests/insects) (limiting export markets)
Strong competition in export markets (e.g. mangoes from India/citrus fruits from China)
Used as subsistence crops (and therefore do not reach markets)
Long distance to market (increasing transport costs)
Accept development of points (examples in parentheses)
Accept sensible use of a development point as a stand-alone point
Do not credit same explanation more than once
(c) (i) Describe what is meant by 'subsistence farming'. [2]
Products consumed by family/ to meet needs of family

Not commercial/not for sale
Natural inputs/ example described e.g. dung used as fertiliser / traditional farming implements/tools / small output / small-scale Surplus = 0

(ii) Explain why some farmers are subsistence farmers. [3]

Land is small size/marginal/infertile/fragmented (therefore unable to use machinery/tractors)
Poverty (therefore need to grow own food) (therefore cannot afford modern inputs/named modern input)
Lack of markets/access to market
Lack of named modern inputs e.g. HYVs / machinery/technology / artificial fertilisers
Lack of education/skills/illiterate
Power of landords/Zamindari system
Remote from markets/shops (and therefore need to feed themselves)
Accept development of points (examples in parentheses)
Accept sensible use of a development point as a stand-alone point

(d) Explain why livestock is an important part of the agricultural sector. To what extent is it possible to develop livestock farming further in Pakistan? [6]

Indicative content (development of points in parentheses)
Importance
Draft power/transport in rural areas (e.g. Persian Wheel)
Food /meat/milk/eggs (for fast growing population)
Dung as manure
Dung as a fuel source (domestic or biogas)
Source of raw materials/hides/skins/wool/hair/bones (especially for cottage industries/export potential/food processing industries)
Possible/greater extent (= current or potential agricultural developments)
Government farms/initiatives (scientific/cross breeding for better quality/higher fertility rates / better diets/early weaning diets for higher yields / training of vets for disease control)
Large scale multi-national/Australian dairy/poultry farms
Not possible/lesser extent
Poor systems of storage/marketing
High price of animal feed (especially if in or near cities, e.g. buffalo rearing)
Little access to vets/animal healthcare (and cannot be afforded by most poor farmers)
Poor drainage/waste disposal (e.g. much buffalo rearing still within cities causing lack of hygiene)
Shortage of funds

M/J15/P2/Q3(a)

3 (a) Study Fig. 6 which gives information about the area of Pakistan under cultivation.

(i) A Name a district that has a cultivated area of over 65%.

Gujranwala/Jhang/Kasur/Khanewal/Lodhran/Mandi Bahauddin/Multan/Pakpattan/ Sahiwal/Sargodha/Vehari

B How much of Faisalabad District is cultivated? [2]

35–65%

(ii) Suggest reasons why so many districts of Pakistan have a cultivated area of less than 5%. [3]

Too far from R. Indus/major rivers
Hilly/mountainous/rugged
Thin/poor/infertile soil/barren/badland topography
Deserts/too dry/low rainfall/high evaporation rate
Delta region/too marshy/area prone to flooding
Extreme temperatures (hot or cold)

(iii) Explain why agricultural land is no longer producing crops in many regions of

Pakistan. [4]
Waterlogging – over-irrigation/unlined canals which cause seepage of water into the ground causing a rise in water table to the surface/making land barren/uncultivable
Salinity – salts rise with water table and are left on the surface when water evaporates making land barren/uncultivable
Overgrazing – too many livestock animals in too small an area/livestock not moved to different pastures causing land to become bare
Overcultivation – crops not rotated or no fallow period or too little fertiliser and soil becomes exhausted
Floods – e.g. 2010, top soil washed away/nutrients leached away/soil erosion
Drought – land becomes too dry to support crops
Alternative use of land – e.g. housing/industries
Land fragmentation – farming becomes inefficient
Zamindari system of Landlords – no incentive for farmers
Workforce migrates to urban areas/lack of skilled or unskilled workers – no one to work the land
Siltation in reservoirs, therefore reduces availability of irrigation water

O/N14/P2/Q3(b and c)

(b) (i) In the list below circle three inputs used mostly for cash crop farming. [3]
Chemical fertiliser
High yield seeds
Modern tractor
(ii) Explain how each of the three inputs you have circled can increase crop yields. [6]
Chemical fertiliser: Adds / replaces nutrients e.g. nitrogenous / nitrates, phosphates, potassium / potash
Larger plants
High Yield Seeds: Increase in yield described / allows multi-cropping / shorter growing period
Resistant to disease / pests
Need less water / drought resistant
Larger plants
Modern tractor: Quick
Efficient
Can use better tools / implements / powers tube-wells
Allows multi-cropping
(c) (i) Explain what is meant by sustainable livestock farming. [2]
To meet the food / animal product needs of the present generation while not compromising the ability of future generations to meet their food / animal product needs
To meet the food / animal product needs of the present generation while protecting / minimising damage to the natural environment
Not overstocking which causes soil erosion / desertification
Not polluting water supplies with farm waste
Protecting young trees from grazing
(ii) To what extent can livestock farming increase food supply in Pakistan? Explain your answer. [6]
Possibilities
Provides meat / milk / eggs / cheese / named food item
Provides protein
Provides raw material for food processing industry
Through selective breeding / livestock research
Higher quality fodder
Through better husbandry / fattening programmes
Cleanliness / hygiene / preventing disease

Veterinary services / vaccinations
Problems
Lack of land
Cost of / lack of fodder / water
Lack of education
Lack of government support
Cost of modern methods / facilities

M/J14/P2/Q1

1 (a) Study Fig 1, a graph showing wheat production and cultivation
(i) By how much did wheat production increase from 1991 to 2010? [1]
10 million tonnes
(ii) By how much did the area of wheat cultivation increase from 1991 to 2010? [1]
11 million acres
(iii) Compare the production of wheat from 1991 to 2000 with the production from 2001 to 2010. [2]
Both increased
Both fluctuated (year to year)
For 1991–2000 Accept converse for 2001–10
Lower (average) production
Increased at a higher rate
From 14–21 mn / by 7 mn whereas 2001–10 from 19–24 mn / by 5 mn
Rises to / maximum 21 mn whereas 2001–10 24 mn
References to figures need million
(iv) To what extent was wheat production related to the cultivated area from 1991 to 2010? [3]
• Direct relationship / positive correlation / relationship described e.g. when production is high, area is high
• Inverse / no relationship = 0 Res 1
• Both lowest in 1991
• Both highest in 2010
• Year both constant – 2009
• Years both increase – 1994 / 1997 / 1999 / 2004 / 2006 / 2008
• Years both decrease – 1993 / 1998 / 2000 / 2001
• Exception (max 1) e.g.: production increases when area decreases – 2002
• production increases when area constant – 1991
• production decreases when area constant 2005 / 2007
• area increases when production constant – 1992 / 1995 / 2003
• area decreases when production constant – 1996
(b) (i) Circle the months in which most wheat is grown in Pakistan. [1]
October–May: Both periods circled = 0
(ii) Explain why the climate at this time is most suitable for wheat farming [3]
• Mild temperatures / 10–20 °C for growth
• Warmer / 25–30 °C (in spring) for ripening / harvesting
• Moderate rainfall / 150–500 mm (in spring) for growth / to swell the grain / before harvest
• Dry period / no rain (in spring) for harvest
c) Why are waterlogging and salinity called 'the twin menaces for farmers'? [2]
• Waterlogging restricts root growth / prevents air pockets in soil
• Salinity poisons the soil / plants cannot tolerate salt
OR the generic for 1 mark max if neither statement above:
Takes agricultural land out of production / makes land uncultivable / infertile / damages crops / reduces yields / reduces income

(d) Describe the ways in which damage by waterlogging and salinity can be prevented. [6]

• Tubewells to lower water table (fresh water pumped up to flush out salt)
• Surface drains dug (diverts surface water to river / lake)
• Canals lined (prevents seepage)
• Canals closed temporarily
• (Eucalyptus) trees planted (deep roots absorb water from water table)

(e) To what extent can better education and training increase farm production? [6]

Possibilities – Res 2
Prevention of waterlogging and salinity / better water management / irrigation
Knowledge of proper fertiliser / pesticide usage
Knowledge of better seed varieties
Use of / ability to repair / maintenance of farm machinery
Easier to get bank / government loans / manage farm finances
Problems – Res 2
Lack of land
Lack of money (to implement the training)
Lack of named infrastructure + link, e.g. electricity for machinery
Power of landlords
Climatic problems
Reluctant to change from traditional methods
[Total 25]

0/N13/P2/Q1

1 (a) Study Photograph A.
Name the irrigation system shown in the photograph and explain briefly how it works. [4]

Name Tubewell
How it works
Tube to groundwater/aquifer
Water pumped up
By tractor/(diesel) motor/generator
Water flows into pond/reservoir/tank
Distributed to fields by canals/pipes/sprinklers etc.

(b) Study Fig. 1, a map showing the main sugar-cane growing areas.
Name on the map one city, town or district in each of the areas A, B and C. [3]

A Peshawar/Charsadda/Nowshera
B Faisalabad/Sargodha/Jhang/Kasur/Lahore/Gujranwala/Sheikupura
C Badin/Sanghar/Hyderabad/Mirpur Khas

(c) (i) What is meant by the following terms? [2]

subsistence crop
a crop for the family to eat/use
cash crop
a crop that is grown to be sold/provides income/grown commercially

(ii) Describe the climate and soil conditions needed for growing sugar cane. [4]

Climate
Temperature 25–35 °C/warm/hot
Can tolerate short periods of frost
Rainfall at least 1500 mm/over 1500 mm per year
Soil(Silt) loams/(clay) loams best
Retain water
Allow infiltration/drainage of excess water
Fertile/rich in nutrients
E.g. alluvial

Rich in nitrogen/phosphates/potash
(d) (i) Give two reasons why sugar cane factories should be built as close as possible to
the fields where sugar cane is grown. [2]
Loses its sugar content after harvesting
Heavy/bulky to transport
Saves transport cost

(ii) Name two by-products from sugar cane processing and give a use of each of them. [4]
Bagasse
Paper/chipboard/baskets/animal feed/fuel
Molasses
Animal feed/bakers' yeast/synthetic rubber/packaging/chemical industry/
citric acid/alcohol/fuel
(e) Name a cash crop, other than sugar-cane grown in Pakistan. Explain the advantages
and disadvantages of increasing its cultivation. [6]
Name
Cotton, wheat, rice, tobacco, oilseeds
Advantages
Increased – farm income, exports, GDP, production of manufactured/processed goods/raw materials for manufacturing (max 2)
Reduction in imports
More jobs
Disadvantages
Less food crops grown
High cost of machinery/HYV/irrigation/etc.
Lack of land, machinery, skilled farmers, water (max 2)
Greater losses if disease/storms/floods
Water pollution from pesticides/fertilisers
Vulnerable to competitors
[TOTAL MARKS: 25]

M/J13/P2/Q3

3 Study Photographs B, C and D (Insert)
(a) (i) Name the crops shown in each photograph and give a use of each within Pakistan.
One mark for correct name + use
B rice – for food
C cotton – for cloth, seeds for oil
D sugar cane – for food, allow by products [3]
(ii) With reference to one of the crops named in (a)(i) explain the meaning of cash crop farming.
No mark for repeating the name of a crop
growing a crop for sale (res. 1)
use of good quality inputs,
e.g. fertiliser, HYV/GM seed, modern machinery [2]
(b) (i) Place the following processes in the correct order
SOWING SEEDS, PLOUGHING, HARVEST, WEEDING
ploughing, sowing seeds, weeding, harvest [1]
(ii) With reference to your answer to (b)(i) explain how rice is grown on small-scale farms in Pakistan.
manual labour/little machinery/hand tools (max. 2)

animal/draft power
seeds planted in nurseries
transplanted into flooded fields
care during growth – weeds, pests, maintaining water levels etc. (max. 3)
water drained before harvest [6]

(c) Study Fig. 4 which shows sugar cane production in Pakistan.

(i) What was the highest annual production, and in which year did it occur?

Production – 64 million tonnes, Year – 2008 [2]

(ii) By how much did production decrease between 2008 and 2010?

15 million tonnes [1]

(iii) Explain why the production of agricultural crops varies from year to year.

temperatures vary
rainfall varies,
e.g. floods, drought, extreme events
irrigation water may be short
high winds
pests/disease/virus
quality of inputs depends on last year's profit
human factors, e.g. sickness
changes in government policies [4]

(d) To what extent could the improvement of road, rail and air transport improve the distribution of food supplies in Pakistan?

Improvements (res. 2)
general comments, e.g. quicker, further, use for emergencies (max. 2)
air quick for perishable food
rail slow for bulky goods
road goes everywhere, door-to-door
Problems (res. 2)
air expensive
roads congested
rail lack of maintenance, not door-to-door
general comments, e.g. lack of funding, difficult topography, poor maintenance (max. 2) [6]
[Total: 25]

M/J13/42/Q3

3 (a) (i) April–October [1]
(ii) 61 mm July [1]
(iii) A April and/or May
B all months between A and C
C October and/or November [3]
(iv) Temperature above 25 °C
Mild night temperatures / no frost
Less rain for harvest
1000 mm rainfall [4]
(b) (i) Production 14 million bales
Year 2006 [1]
(ii) Production varies more
Area changes by 0.4 m.ha, production by 5.5 m bales
More detail
Other comparative figures / averages etc. [3]
(c) education
training
advertising
cheap loans

machinery on lease
co-operatives
land consolidation [6]
(d) IN FAVOUR
employment
for women
local demand
international demand
reduces migration
local raw materials
can use waste materials e.g. rubber, rope
low set-up costs / investment
BUT
Poor quality
Child labour
Lack of infrastructure
Etc. [6]
(Sethi p. 150)
[25]

O/N12/P2/Q3(b and c)

(b) Study Fig. 5 showing the results of a survey in 2008.
(i) What percentage of land is cultivated? [1]
37/ 38
(ii) What percentage of land is waste? [1]
13 / 14/ 15
(iii) Explain how soils are damaged by waterlogging and salinity. [4]
Caused by too much irrigation water / misuse of water by illiterate farmers
Seeps from canals
Water table rises / soil becomes too wet / puddles of water
Water rises upwards carrying salts
Evaporates causing salinity
hard crust forms / salt patches
salt poisons crops / crops die
Roots cannot breathe in waterlogged soil
(iv) Explain three reasons, other than by waterlogging and salinity, why over half the land was not cultivated when the survey was made. [6]
Pasture - grazing
Fallow – to allow soil to rest
Low rainfall / away from canals / desert –infertile, plants cannot grow, no soil
Mountains – steep slopes / lack of soil (accept rugged)
Forest – need for
Rivers – may flood
Residential / housing - for large population
Industry – factories need large space
Commercial – eg. city centres
Mineral extraction – plus waste
Pollution – crops die
Roads, railways, airports – for communication
Damage – eg. deforestation, pollution
Wasted by landlords
Very cold
1 mark for reason, 1 mark for explanation. [3 × 2]

(c) To what extent could government action increase agricultural production in Pakistan?
[6]
Possibilities (res. 2)
Improve education eg. model farms, travelling advisors, training centres, colleges
Loans eg. for machinery, HYV, fertiliser
Subsidies eg. for imported machinery, fertiliser prices lower
More fertiliser / pesticides factories or imports
More machinery factories or imports
Land reforms eg. consolidation
Improve water availability eg. reservoirs, canals
Cure of waterlogging and salinity eg. SCARP
Weather forecasts
Media eg. radio, TV
Problems (res. 2)
Lack of money
Illiteracy
High population
Other calls on government investment / attention
Fears of unemployment due to mechanisation
Land reforms may fail due to corruption / power of landlords etc.

M/J13/P2/Q3

3 (a) Study Fig. 4 showing the climate of Sialkot.
(i) Circle on the x-axis
A the month when rice would be planted.
Any one month from April to June
B the months when it would be growing
Any 3–5 consecutive months between May and September
C the month when it would be harvested
September or October [3]
(ii) Explain how canal irrigation is used and controlled to grow rice. [4]
from river / reservoir / dam / barrage / another canal
closed or opened (by sluice or gate)
field flooded in preparation / for nursery beds / before transplanting
kept flooded during growth
to a depth of about 30–37 cm / 12–15 inches
drained before harvest
(b) Study Fig. 5 showing wheat production.
(i) What was the production in 2008? [1]
21 million tonnes / 21 000 000 tonnes
(ii) Compare this to the production of wheat in the years from 1999 to 2007. [2]
higher than in 1999 / 2001/02/03/04
but not as high as 2005 / 2007
same as 2000 / 2006
(iii) Explain the reasons for the changes in production over these years. [4]
Rainfall variability / drought }
floods / storm damage } reference to a form of water supply max 2
poor irrigation }
temperature
pest attack
capital / loans / profit from previous year
family sickness
security / theft

wheat price
reasons for overall increase e.g. HYV, better / more fertiliser, mechanisation, training, population increase

(c) To what extent is it possible to increase agricultural production by the use of modern methods? [6]

Possibilities (res. 2)
More growth with fertilisers
Less damage with pesticides
More yield with better seed / HYVs /GM crops
HYVs / GM pest resistant
Benefits of machines (max. 2)
named modern irrigation method (max 2)
Treatment of waterlogging and salinity e.g. with tubewells
Crop rotation to improve fertility eg. growing pulses, fallow
Training and education
Problems (may be environmental or economic) (res. 2)
Lack of literacy / education
Means less training
Lack of money to invest
Traditional farming methods
Over-use of irrigation water causes waterlogging / salinity
Small / fragmented farms
Causes and effects of pollution
Build up of resistance to pests
High cost of fertiliser, machinery etc.
Water pollution from runoff with fertiliser / pesticide
May be unsustainable
N.B. Credit other reasonable ideas