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LEARNING OUTCOMES!

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.
- 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.
- 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
- 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.

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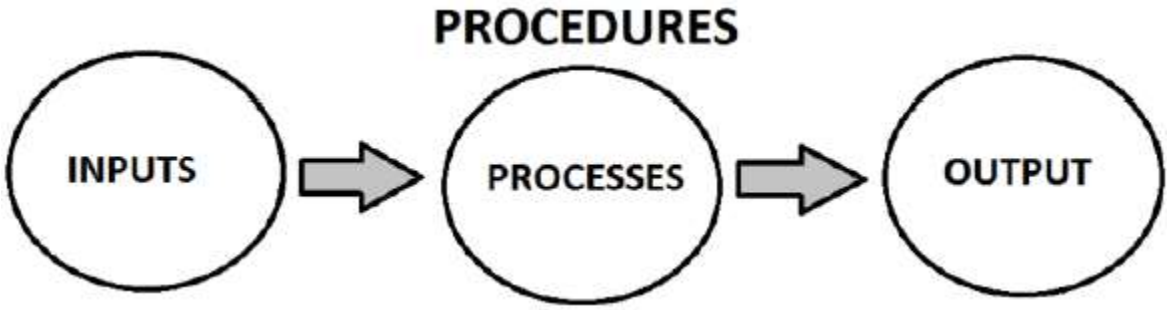
AGRICULTURE

- ✓ Agriculture is a combination of two words i.e. Agri and culture. Agri means farming and culture means practice, it means practice of farming is called agriculture.
- ✓ Agriculture is the process by which food crops and other goods are produce, including Wheat, Rice, Sugarcane, Maize along with Cotton etc.



SUBSISTENCE FARMING

- ✓ Subsistence farming means growing of crops mainly for the people who work on them.
- ✓ Surplus is sold in the local village market.
- ✓ Most of the farmers have to supplement their income from othr sources e.g. carpenter, blacksmith, cobbler.

INPUTS	PROCESSES	OUTPUTS
Land	Ploughing by Bullocks	Rice
Soil	Sowing by Labor	Wheat
Climate	Irrigation by Traditional methods	Maize
Water	Fertilizing by Natural Manure	Vegetables
Natural Manure	Weeding by Labor	
Draft Power	Threshing by Labor	
Desi Seeds		
Traditional Plough		
Labour		
Inherited Knowledge		

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CASH CROP FARMING

- ✓ Cash crop farming means the growing of crops for sale
- ✓ A crop that is grown primarily for sale is called a cash crop

INPUTS	PROCESSES	OUTPUTS
Land	Ploughing by Tractors	Rice
Soil	Sowing by Machines	Wheat
Climate	Irrigation by Modern Methods	Maize
Water	Fertilizing by Chemical Fertilizers	Vegetables
Fertilizers	Weeding by Labor	Cotton
Machinery	Threshing by Thresher	Sugarcane
HYV seeds	Harvesting by Harvestor	
Pesticides		
Skilled Labour		
Knowledge		

NATURAL INPUTS

- ✓ Agricultural requirements provided by nature e.g. Land, Soil, Climate.

FLAT LAND

- ✓ Use of machines.
- ✓ Crops grow at equal height, easy to harvest
- ✓ Distribution of water equally
- ✓ Less soil erosion
- ✓ Less drainage
- ✓ Easy to cultivate
- ✓ Provision of canal irrigation

SOIL

- ✓ Soil is the material in which the roots of the plant are embedded.
- ✓ A soil suitable for growth contains sufficient minerals for crop growth and also has sufficient pore spacing.

- ✓ Pore spacing is important as it controls the amount of air and water available for plant roots.
- ✓ Too little spacing (clayey) soil means that it will contain less air and more water, thus won't support plant growth
- ✓ On the contrary a sandy soil will allow air but will also allow a lot of water to infiltrate into the subsoil. This water may also take down with it fertilizers and other natural minerals (which are wasted as roots did not have time to absorb them)
- ✓ The best soil is loamy soil, which contains sufficient pore spaces (to allow for sufficient air and moisture). Spaces aren't too big; so the soil does retain nutrients, which are not leached into the soil
- ✓ The soil must be deep and must contain nitrates and phosphates; which are required for crop growth
- ✓ Alluvial soil contains nutrients, retains water, retains fertilizers. This type of soil can be drained easily

CLIMATE

- ✓ Every crop has its own distinct climatic requirements. This includes rainfall, humidity, temperature, amount of sunlight etc.
- ✓ In Pakistan, these requirements basically fall into two groups, Kharif and Rabi.

Sunshine

- ✓ Photosynthesis
- ✓ Warmth
- ✓ Ripening

Temperature

- ✓ For growing

Rainfall

- ✓ For germination
- ✓ Growing
- ✓ Swelling the grains
- ✓ Soften the soil for ploughing \ sowing
- ✓ Planting seeds
- ✓ For flooding fields for rice

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DISADVANTAGES OF NATURAL INPUTS

Early Arrival

- ✓ Low yield and income
- ✓ Flooded or water logged
- ✓ Seedlings may be washed away
- ✓ Ground too wet
- ✓ Encourages pests and diseases

Late Arrival

- ✓ Low yield and income
- ✓ May delay planting or sowing
- ✓ Growth stops
- ✓ Irrigation, costly
- ✓ Shortage of water

Variation Of Rainfall

- ✓ Irrigation is costly
- ✓ Shortage of water
- ✓ Unreliable income
- ✓ Livestock may die

Thunderstorms

- ✓ Damage crop
- ✓ Soil erosion

Frosts

- ✓ Kill plants
- ✓ Growth is reduced

Droughts

- ✓ Kill young plants
- ✓ Seeds can die
- ✓ Growth is reduced

Floods

- ✓ Wash the crops away
- ✓ Soil erosion

HUMAN INPUTS

- ✓ Agricultural requirements provided by man. e.g. Capital, Labor.

CAPITAL

- ✓ This is all the money and machinery that is invested into the farm including tractor and harvester etc

Money

- ✓ To buy seeds
- ✓ To buy Chemical fertilizers
- ✓ To buy HYV's
- ✓ To buy Machines
- ✓ To buy Land
- ✓ To pay Labor
- ✓ Irrigation

Advantages Of Machinery

- ✓ Less time consuming
- ✓ Less labor
- ✓ Better work
- ✓ Better processes

Disadvantages Of Machinery

- ✓ Expensive to buy or import
- ✓ High maintenance cost
- ✓ Difficult to repair
- ✓ Unemployment
- ✓ Skilled labor
- ✓ Cannot be used in mountains

- ✓ Cannot be used in small lands

FERTILIZER

- ✓ These replace the nutrients that have been used up by the crop.
- ✓ With the use of fertilizers, nutrients are available for plant growth resulting in higher yields

Advantages

- ✓ Increases yield
- ✓ Extension of farm
- ✓ Grows faster because it provides nitrogen, potassium, and phosphate.
- ✓ Better than dung

Disadvantages

- ✓ Costly
- ✓ Knowledge and skills needed
- ✓ Soil erosion
- ✓ Pollution of ground water
- ✓ Eutrophication
- ✓ Not readily available

PESTICIDES AND INSECTICIDES

- ✓ These are sprayed to kill insects, which damage crop growth by eating leaves etc.

Advantages

- ✓ To kill insects, pests, and viruses
- ✓ Prevent loss
- ✓ Increases the output and income.

Disadvantages

- ✓ Costly
- ✓ Knowledge and skills needed
- ✓ Also kill useful insects

- ✓ Sever effects in natural food chain
- ✓ Causes gastrointestinal infections

LABOUR

- ✓ Labour is all the human effort that is put in from the time of plantation of crop to the time of harvest.

Advantages

- ✓ Maintain machinery
- ✓ Spread fertilizers
- ✓ Ploughing
- ✓ Sowing
- ✓ Threshing
- ✓ Harvesting

Disadvantages

- ✓ Can't work 24/7
- ✓ Less perfection in work if compared with machinery

SEEDS

- ✓ A desi variety of seeds produces lower yields as compared to a high yielding variety of seeds.
- ✓ But it must be noted that only desi varieties are adapted to the local climatic conditions.
- ✓ Therefore to achieve high yields in an adverse climate a hybrid of the two varieties is required

Advantages of Desi

- ✓ Cheap
- ✓ Less Chemical Fertilizer required if compared with HYV
- ✓ Locally available

Advantages of HYV

- ✓ Increases yields

- ✓ Grow's faster
- ✓ Less water demand
- ✓ Pest resistant
- ✓ Bigger germination
- ✓ Stronger stems
- ✓ Needs little space

Disadvantages of Desi

- ✓ Less yield
- ✓ Grow slowly if compared with HYV
- ✓ More water demand
- ✓ No Pest resistant
- ✓ No Stronger stems

Disadvantages of HYV

- ✓ Expensive to use
- ✓ Professional skills
- ✓ Require more chemical fertilizers
- ✓ To be imported

ROADS

- ✓ To takes crops to factories

ELECTRICITY/DIESEL

- ✓ Tube wells
- ✓ Tractors
- ✓ Drying crops
- ✓ Other machineries e.g. Generator

HERBICIDES

- ✓ Kill weeds

IRRIGATION

- ✓ Better water supply
- ✓ Meet rain shortages
- ✓ Reduces salinity
- ✓ Increases yield

EDUCATION SKILL

- ✓ Machine repairing
- ✓ New seeds varieties
- ✓ Better methods
- ✓ Modern methods
- ✓ Avoid crop failure

PROCESSES

- ✓ A series of things that are done in order to achieve a particular result.

Ploughing

- ✓ A large piece of farming equipment with one or several blades pulled by a tractor or animal. It is used for digging and turning over soil specially before seeds are planted.

Sowing

- ✓ Spreading seeds in or on the ground with machine or by hands.

Irrigation

- ✓ To supply water to an area of land through tube well / channels so that crops will grow.

Fertilizing

- ✓ Adding substances to soil to make plants grow more successfully.

Weeding

- ✓ Cutting of wild plants growing where they are not wanted especially among crops.

Threshing

- ✓ To separate grains of wheat or rice from the chaff.

Harvesting

- ✓ Cutting the crops

PRACTICE QUESTIONS 1.1

Question 1 — N2017/P2/Q3/B(iv)

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

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.....[4]

Question 2 — J2017/P2/Q1/A

(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
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[4]

Question 3 J2017/P2/Q4/B(ii)

(ii) Explain how the use of chemical fertilisers on farms damages the natural environment. You should develop your answer.

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.....[4]

Question 4 N2016/P2/Q1/B

(b) Study Photographs A and B (Insert) which show parts of the lower Indus valley. Using the photographs and your own knowledge, explain the advantages for agriculture in areas like this.

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.....[4]

Question 5 N2015/P2/Q3/C

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

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.....[2]

(ii) Explain why some farmers are subsistence farmers.

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.....[3]

Question 6 N2014/P2/Q3/B

(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]

Question 7 J2014/P2/Q1/C

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

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.....[2]

Question 8 N2013/P2/Q1/C(i)

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

Subsistence crop.....

.....

Cash crop.....

.....[2]

Question 9 J2012/P2/Q3/C

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

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.....[6]

Question 10 J2011/P2/Q2/C(i)

(c) (i) Explain why crop yields may be low when subsistence farming methods are used.

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.....[6]

Question 11 N2010/P2/Q5/B(i-ii)

THE BIG POWER TRACTOR COMPANY

- Our tractors are big and powerful.
- They work quickly and efficiently.
- They can do many tasks.

For sale or lease Bank loans can be arranged

Contact The Big Power Tractor Company, Karachi, Pakistan
Tel. 021-7654222
Fax. 92-21-7654333
Website www.Bigpowertractors.com
E-mail bigpowertractors@pakcom.com

(b) (i) Explain **two** of the reasons given in the advertisement for using this tractor on a farm.

1 .....

.....

2 .....

.....[2]

(ii) Why are tractors not used by many small-scale farmers?

.....

.....

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.....

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.....[4]

Question 12 N2009/P2/Q2/D(i)

(d) Study the list of factors below which affect agricultural development:

mechanisation	**land consolidation**	**transport improvements**	
financial loans	**education**	**telecommunication**	**new seed varieties**

(i) Choose **three** of these factors and **for each** explain how it increases production of sugar and other agricultural products. [6]

Question 13 J2009/P2/Q2/C-D

(c) (i) Explain why many farmers use HYV (High Yield Varieties) of seed. [4]

(ii) Study Fig. 2 again. In how many months is the rainfall less than 40 mm? [1]

(iii) Briefly explain **four** methods of providing water in times of low rainfall. [4]

(d) (i) What is alluvial soil? [2]

(ii) Explain why alluvial soil is good for crop growth. [3]

Question 14 N2008/P2/Q4/B-C

(b) (i) Explain why the cultivation of rice is labour-intensive. Refer in your answer to the work done from planting the seeds to harvest. [5]

(ii) Name a type of machine that can be used for rice cultivation instead of human labour. [1]

(iii) What are the advantages **and** disadvantages of using this machine? [4]

(c) Study the list below:

SOIL	FERTILISER	RAIN	IRRIGATION	SEEDS
SUNSHINE	PESTICIDES	DRAINAGE	KNOWLEDGE	

(i) Choose **two physical** inputs from the list above. Explain how these can increase rice yields. [6]

(ii) Choose **two human** inputs from the list above. Explain how these can improve rice yields. [6]

Question 15 N2006/P2/Q1

Study Photograph A (Insert) of a rural area in Hyderabad District.

X Y

(a) (i) What is this man doing? [1]

(ii) Why is the soil at **X** a different colour from the soil at **Y**? [1]

(iii) Name **three** inputs for farming **other than soil** that can be seen on the photograph. [3]

(iv) Describe **three** other processes that may be carried out before a crop is harvested. [3]

(b) (i) What is subsistence farming? [1]

(ii) Name **two** animals other than those on Photograph A that may be kept by a small-scale subsistence farmer. [2]

(iii) For **each** of the two animals you have named in **(b)(ii)**, explain how it is important to the farmer and his family. [4]

(c) (i) Why does the output of a small-scale subsistence farm vary from year to year? [4]

(ii) If this farmer has a good crop and can sell some in the market, how may he use the money he earns (capital) to improve his yield (production) in the next year? [4]

(iii) Give **two** ways in which a small-scale subsistence farmer can supplement his income. [2]

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WHEAT

Type

- ✓ Rabi crop

Uses

- ✓ Manufacture of bread and a variety of baked products
- ✓ Low grades of wheat are used as feed for livestock

By Products

- ✓ Chaff, used for feed and mix it with mud to make storage hut

Method Of Cultivation

- ✓ In oct-dec after ploughing the field, wheat seeds are sown directly into the ground
- ✓ Most of the farmers irrigate land twice.
- ✓ First irrigation, one month after sowing
- ✓ Second irrigation one month before harvesting
- ✓ Harvested after three months

Natural Inputs

- ✓ 10-20 degree for growing
- ✓ 20-25 degree for ripening
- ✓ Light rain in oct-nov for growth
- ✓ Requires 325-625 mm
- ✓ Alluvial, loam,clay,water retentive and well drained soils
- ✓ 90 days
- ✓ Little rain just before harvesting.

Human Inputs

- ✓ New HYV's
- ✓ Improvement in irrigation
- ✓ Chemical fertilizers
- ✓ Machinery

Areas

- ✓ Nawabshah
- ✓ Nausharo
- ✓ Rahimyar khan
- ✓ Bhawalpur
- ✓ Multan

Hyv

- ✓ Maxi pak
- ✓ Shah khan 95
- ✓ Wadnak 95
- ✓ Kohsan 95

BARANI FARMING

- ✓ It is practiced in areas like the Potwar Plateau which have low amounts of seasonal rainfall.
- ✓ Important crops grown are wheat, maize, millet etc all which require low amounts of water and sunlight
- ✓ When the rains arrive or are about to arrive, the land is ploughed so it becomes soft.
- ✓ Immediately after the rain, the seeds are sown and the periodic cycle of sunny weather in between light rainy days continues till the harvest.
- ✓ Within the growing period hoeing is done (to remove weeds), if pesticides and fertilizers are available then they are added otherwise cow dung is used.
- ✓ Lastly the harvest season must be sunny and dry.

PRACTICE QUESTIONS 1.2

Question 1 J2014/P2/Q1/A-B

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

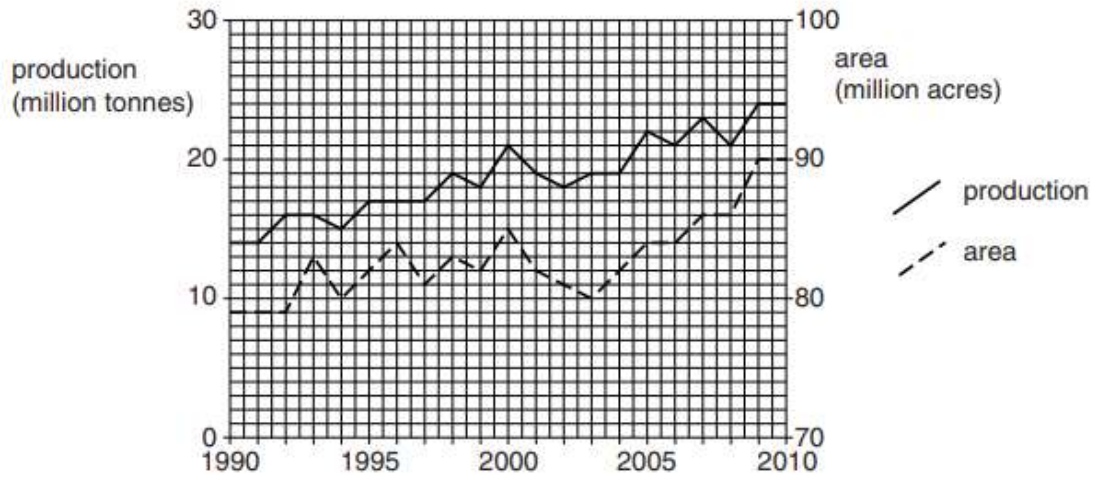

Fig. 1

(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?

.....

.....

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.....

.....[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.

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.....[3]

Question 2 J2012/P2/Q3/B

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

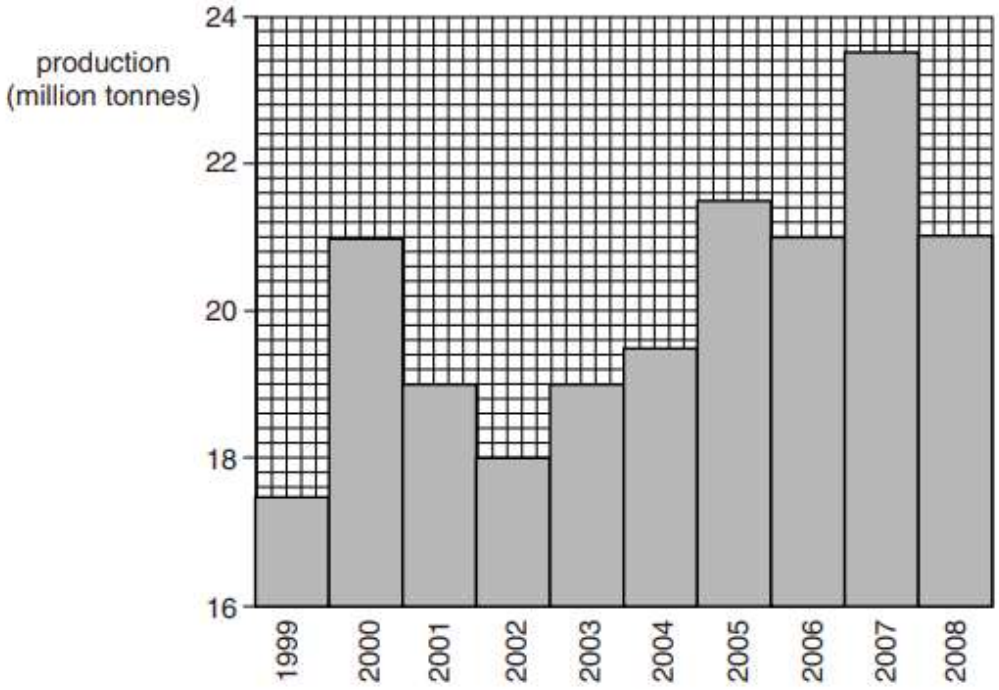

Fig. 5

(i) What was the production in 2008?

.....[1]

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

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.....

.....[2]

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

.....

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.....[4]

Question 3 J2011/P2/Q2/B

(b) (i) What is meant by a barani crop?

.....

.....[1]

(ii) Name **one** area of Pakistan where most wheat is grown by the barani method.

.....[1]

(iii) Study Fig. 2, which shows the months when wheat is grown by the barani method.

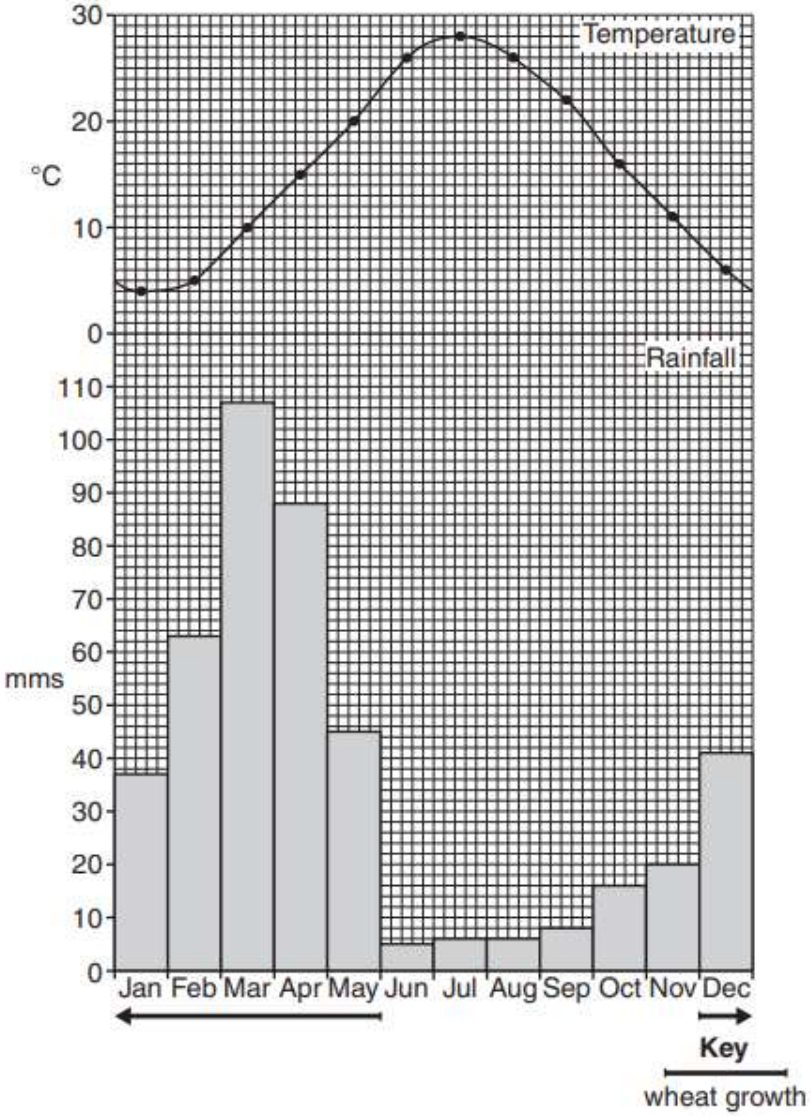


Fig. 2

How much rain fell in the wettest month?

..... mms [1]

(iv) Describe the barani method of wheat cultivation with reference to the temperatures and rainfall shown on Fig. 2.

Temperatures .....

.....

.....

.....

.....

.....

Rainfall .....

.....

.....

.....

.....

.....[5]

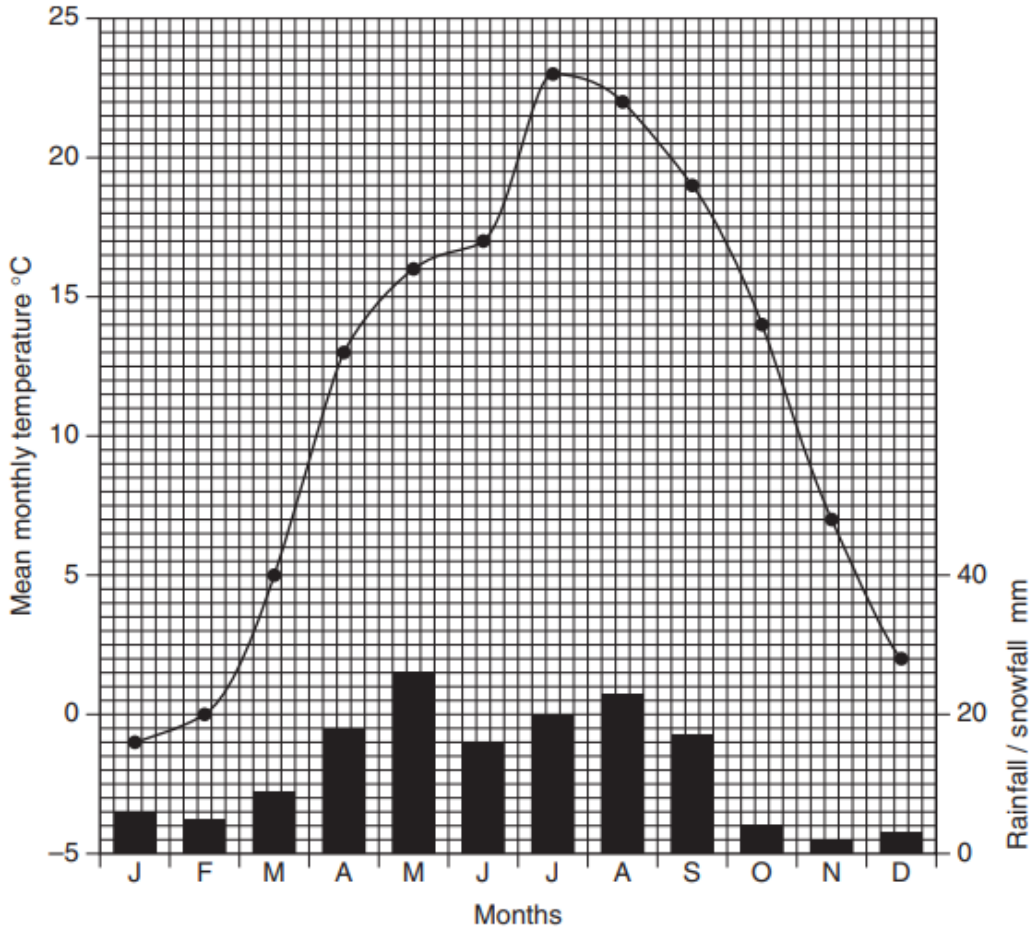
Question 4 J2010/P2/Q2/B

(b) (i) Describe the methods of cultivation of wheat on barani (rain-fed) lands. [5]

(ii) Explain the advantages and disadvantages to wheat farmers of modern irrigation methods such as perennial canals and tubewells. [5]

Question 5 N2005/P2/Q2/C

(c) Study the climate graph, Fig. 4, which shows the rainfall/snowfall and mean monthly temperatures in the valley.



(i) The wheat is harvested about 6 months after it is sown. In which month is the wheat most likely to be sown here? [1]

(ii) Why is the climate in the months after it is sown good for the growth of wheat? [3]

Question 6 J2005/P2/Q3/A-B

(a) Study the bar chart, Fig. 3, which shows the acreage of 4 crops grown in Pakistan from 1980 to 2000.

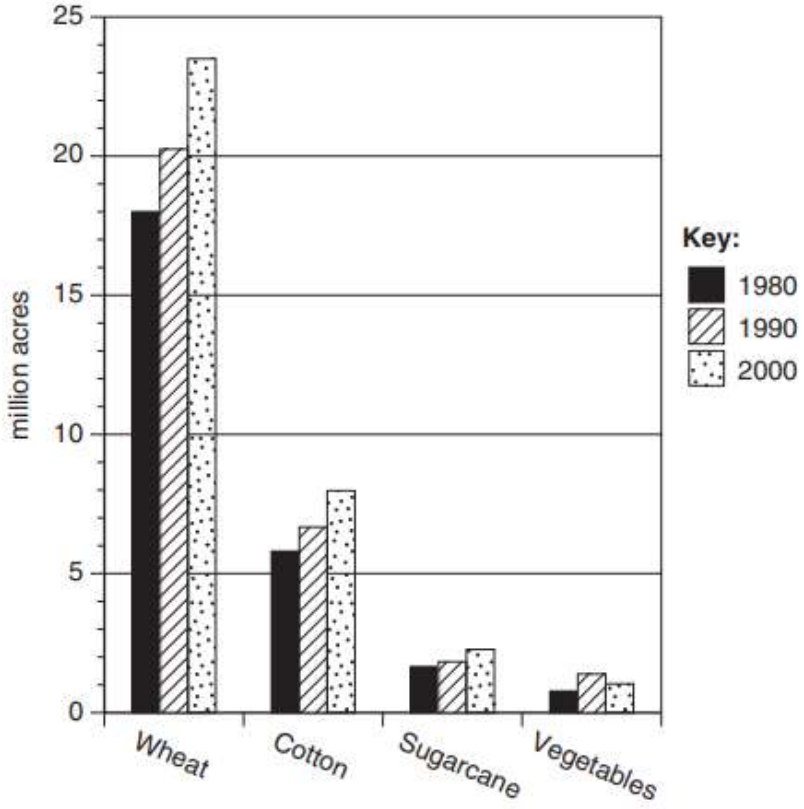


Fig. 3

(i) How many million acres of wheat were grown in 2000? [1]

(ii) For which crop was there a reduction in area from 1990 to 2000? [1]

(iii) For which crop was there an increase in area from 1980 to 2000 by 2 million acres? [1]

(b) (i) Why is an increase in wheat production important? [3]

(ii) State **two** natural inputs necessary for wheat production, and for each explain its importance. [5]

(iii) Explain how human inputs have contributed to the increase in wheat production. [6]

RICE

Type

- ✓ Kharif

Uses

- ✓ Used as food
- ✓ Exported

By Products

- ✓ Rice husks are used for making cardboards or covering roofs of houses after mixing it with mud
- ✓ For livestock

Method Of Cultivation

- ✓ The tractor pulls a plough in march. Each time he ploughs, he goes in a different direction, so that soil is well broken up.
- ✓ If the farmer cannot afford to hire tractor, he uses a bullocks to pull a plough at the right depth in the soil.
- ✓ While land is being prepared, rice seeds are sown in the nursery in the corner of the field.
- ✓ When seedlings are about 30 cm tall, they are ready to be transplanted.
- ✓ In may, farmers usually employ some labour for transplanting.
- ✓ Bundles of rice seedling are carried from nursery to prepared fields.
- ✓ Prepared fields have now been flooded to a depth of 25 cm, ready for transplanting the seedlings
- ✓ It is skilled work because seedling will float away if they are not planted properly.
- ✓ Rice crops are protected from birds
- ✓ Fertilizers is scattered on the field
- ✓ Insecticide is also scattered on the field
- ✓ In September, rice is ripe and ready for harvesting
- ✓ Water is drained off
- ✓ Sickle is used to cut the crop
- ✓ Rice is then tied in bundles and carried to be threshed manually.

Natural Inputs

- ✓ Worms hot temperature 30◦ degree celcius with no cold season
- ✓ At least 1270 mm per year
- ✓ Over 2000 mm per year is ideal
- ✓ Dry sunny weather at harvesting time
- ✓ Loamey or clayey soil

Human Inputs

- ✓ Cheap labour
- ✓ HYV's
- ✓ Irrigation

Areas

- ✓ Larkana
- ✓ Sialkot
- ✓ Gujranwala

Hyv

- ✓ Basmati
- ✓ IrriPak
- ✓ IR8

PRACTICE QUESTIONS 1.3

Question 1 J2016/P2/Q2/A

(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 .....

.....

.....

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.....[3]

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

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.....[3]

Question 2 N2015/P2/Q3/A

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

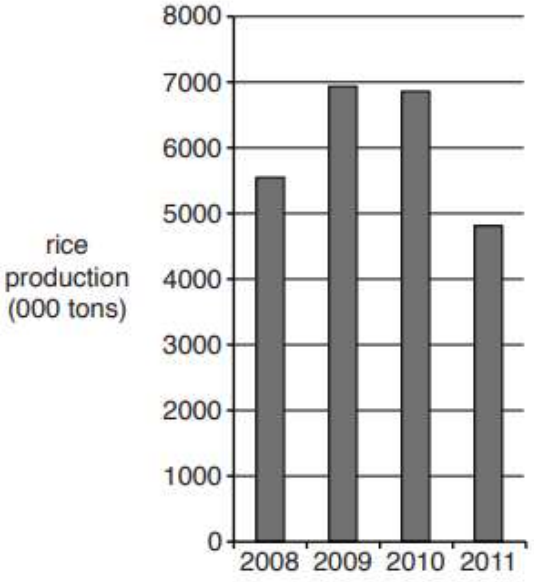

Fig. 4

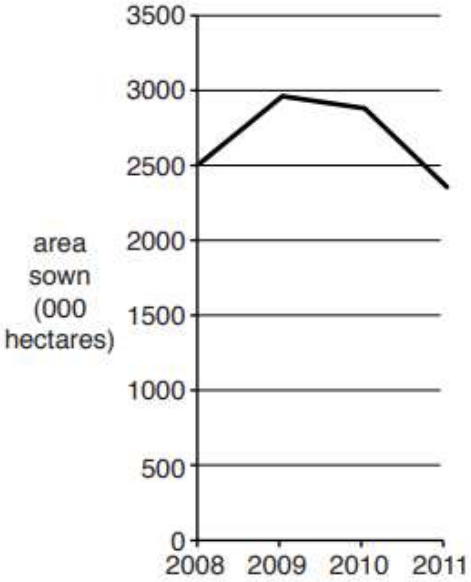

Fig. 5

(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]

Question 3 J2013/P2/Q3/B

(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.

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.....[6]

Question 4 J2012/P2/Q3/A

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

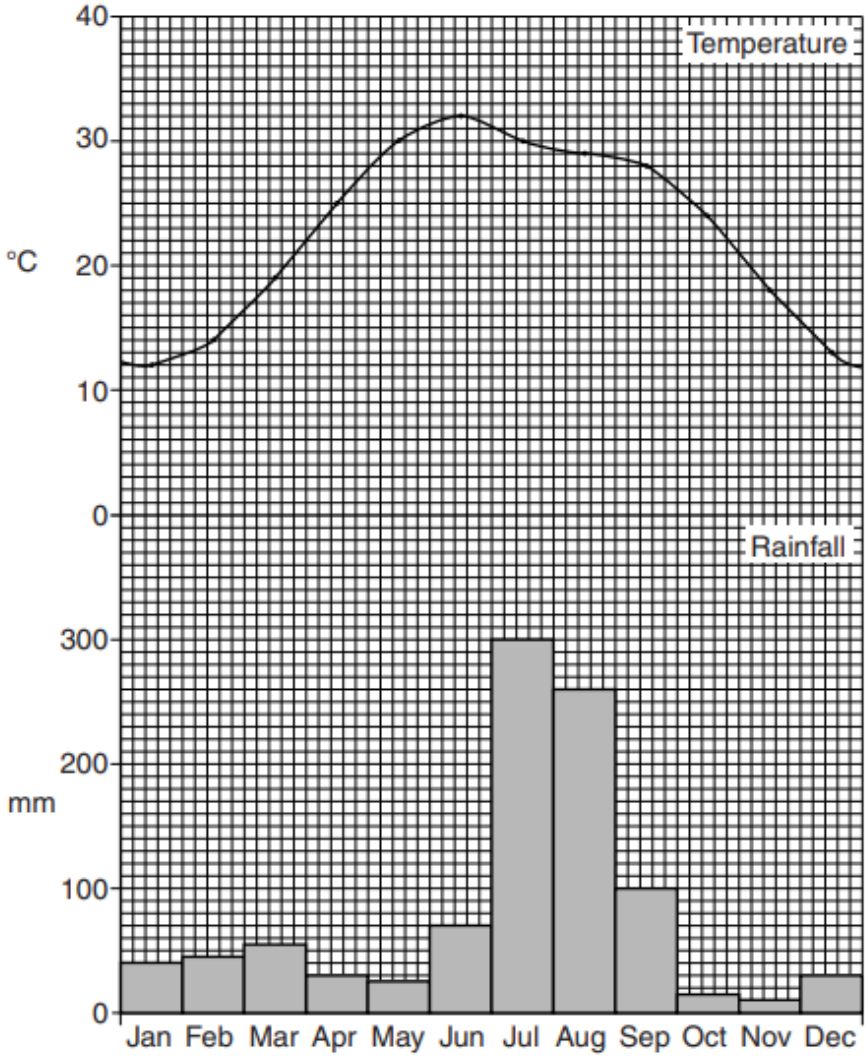

Fig. 4

(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.

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.....[4]

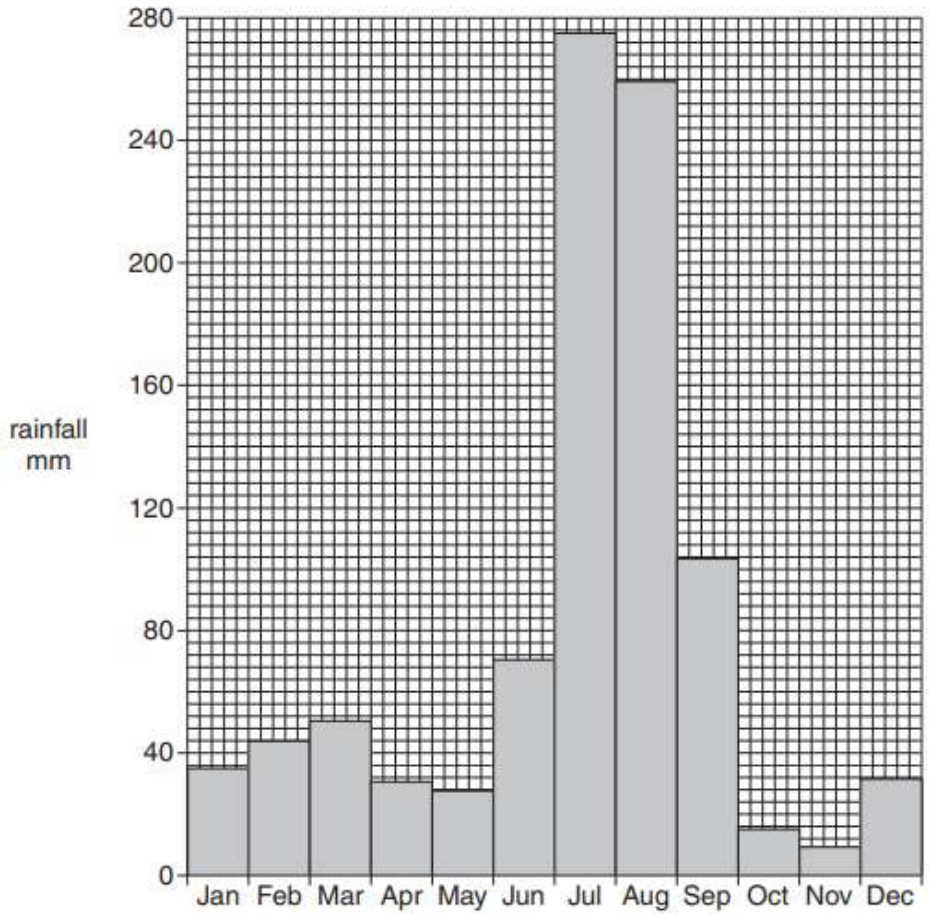
Question 5 J2009/P2/Q2/A-B

(a) There are four main processes of rice cultivation:

harvesting **planting** **preparation of fields** **growth**

List these processes in the correct order. [1]

(b) Study Fig. 2, a bar chart showing monthly rainfall in the Lahore area.



Explain how **each** of the processes named in **(a)** is linked to the rainfall in the Lahore area from June to October. [4]

Question 6 N2008/P2/Q4/A-B(i)

(a) Study Fig. 5, a pie chart showing rice production in Pakistan by province.

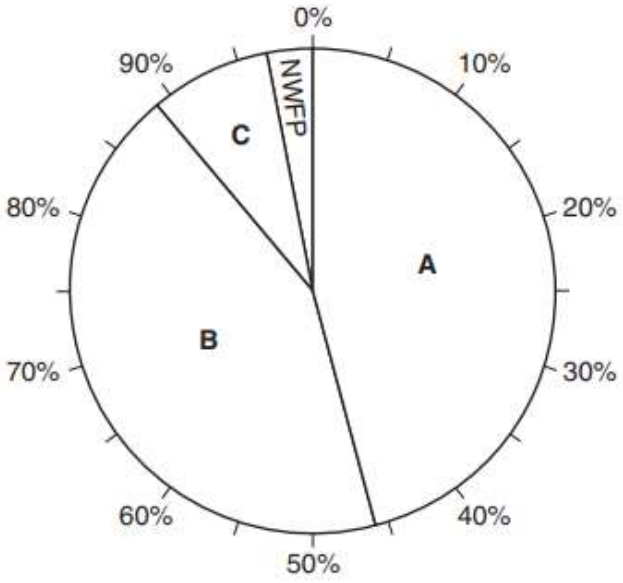


Fig. 5

(i) Name the provinces **A** and **B** where most rice is grown. [1]

(ii) What percentage of total rice production comes from these two provinces? [1]

(iii) Name a variety that has doubled rice production. [1]

(b) (i) Explain why the cultivation of rice is labour-intensive. Refer in your answer to the work done from planting the seeds to harvest. [5]

Question 7 J2006/P2/Q3/C

(c) (i) State **two** climatic inputs for rice cultivation. [2]

(ii) How can the yield (production) per hectare of rice be increased? [6]

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COTTON

Type

- ✓ Kharif

Uses

- ✓ Most widely used textile fibre in Pakistan.
- ✓ Clothes, fabrics

By Products

- ✓ Cotton seeds, separated from lint, a fluffy mass of fibres inside cotton balls
- ✓ Cotton seeds are used as animal feed and for the extraction of oil.

Method Of Cultivation

- ✓ Sown at a distance apart of 30 cm to 45 cm in April-May.
- ✓ One month later fields are irrigated.
- ✓ Second irrigation takes place after a further two months
- ✓ Cotton ball ripen in dry months of Oct and Nov.
- ✓ Plant reaches a height of up to 135 cm-150 cm.
- ✓ After picking cotton balls are loaded on to trucks.

Natural Inputs

- ✓ Ideal temperature for cultivation is 25 to 35 degrees.
- ✓ Mid nights temperature are better for development of the balls.
- ✓ Sensitive to frost.
- ✓ 1000 mm rainfall.
- ✓ Medium loam.
- ✓ Level land

Human Inputs

- ✓ Machinery.
- ✓ Pesticides.
- ✓ Irrigation.

Areas

- ✓ Nawabshah
- ✓ Bhawalpur
- ✓ Multan

Hyv

- ✓ Nayyab 78
- ✓ B-557
- ✓ 149-F

What Harms The Cotton Crop?

- ✓ Greatly affected by rise in day and night temperature changes to leaf-curl and fruit shedding.

PRACTICE QUESTIONS 1.4

Question 1 N2016/P2/Q4/A

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

1 .....

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.....

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2 .....

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.....[4]

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

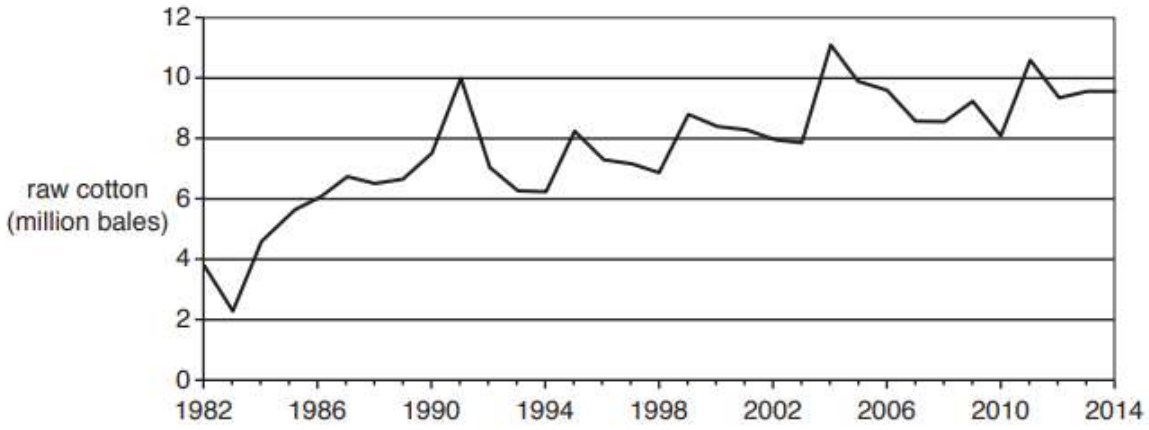

Fig. 6

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

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.....[3]

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

1 .....

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2 .....

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3 .....

.....[3]

Question 2 N2011/P2/Q2/A-C

(a) Study Fig. 2, which shows cotton growing regions in Pakistan.

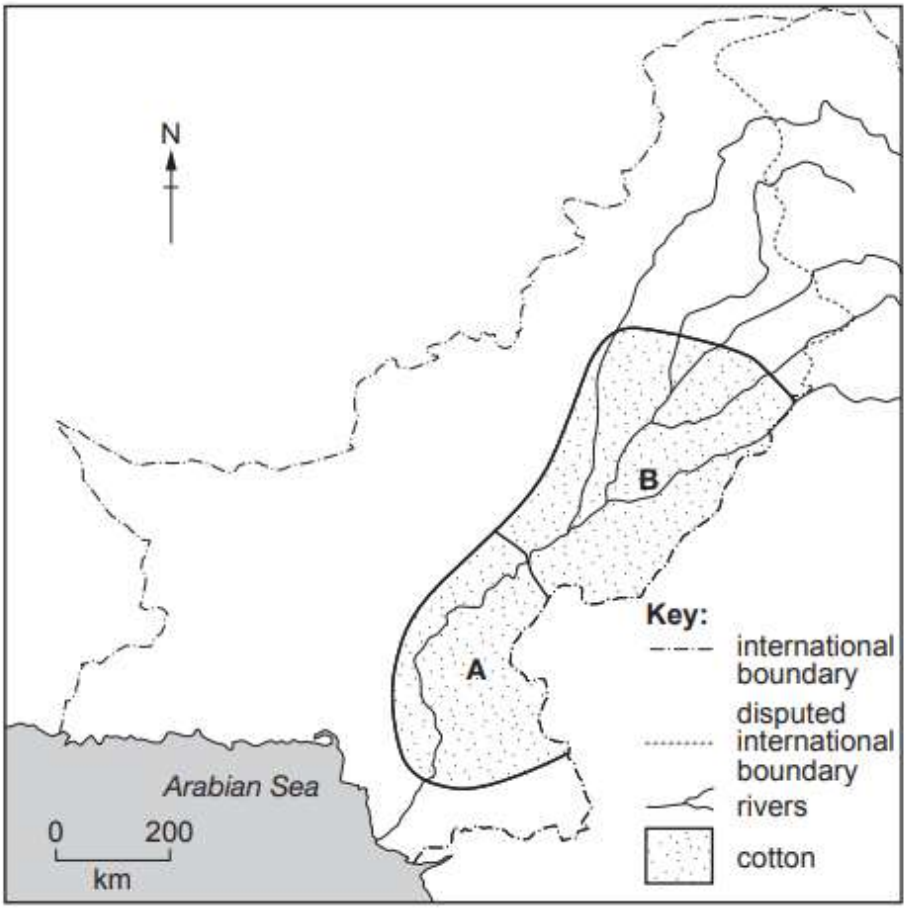

Fig. 2

(i) Name the regions **A** and **B**.

A .....

B .....[2

(ii) Why is cotton not grown further north?

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.....[2]

(iii) Why is cotton not grown further west?

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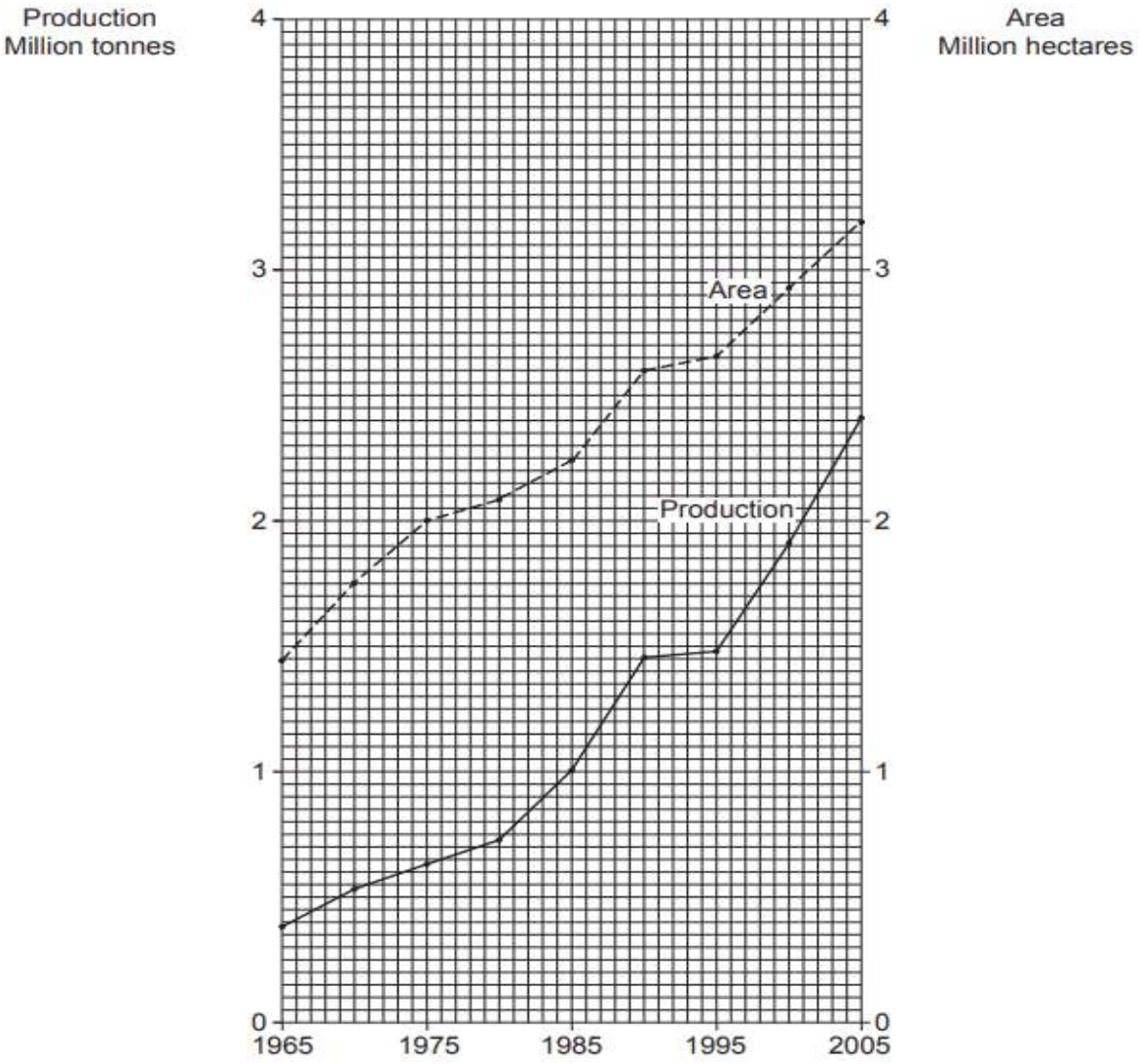
.....[2]

(b) Study Fig. 3, a graph of cotton farming.



(iii) By how much has the area used to grow cotton increased from 1975 to 2005?

..... million acres [1]

(iv) Which has increased faster, the area used or the cotton production?

.....[1]

(c) (i) Explain **three** factors that have caused the yield of cotton to increase per hectare.

1 .....

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2 .....

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3 .....

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.....[6]

(ii) Explain why cotton yields vary from year to year.

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.....[3]

Question 3 N2007/P2/Q2/A-B

(a) Study Fig. 2, which shows the climate of Multan.

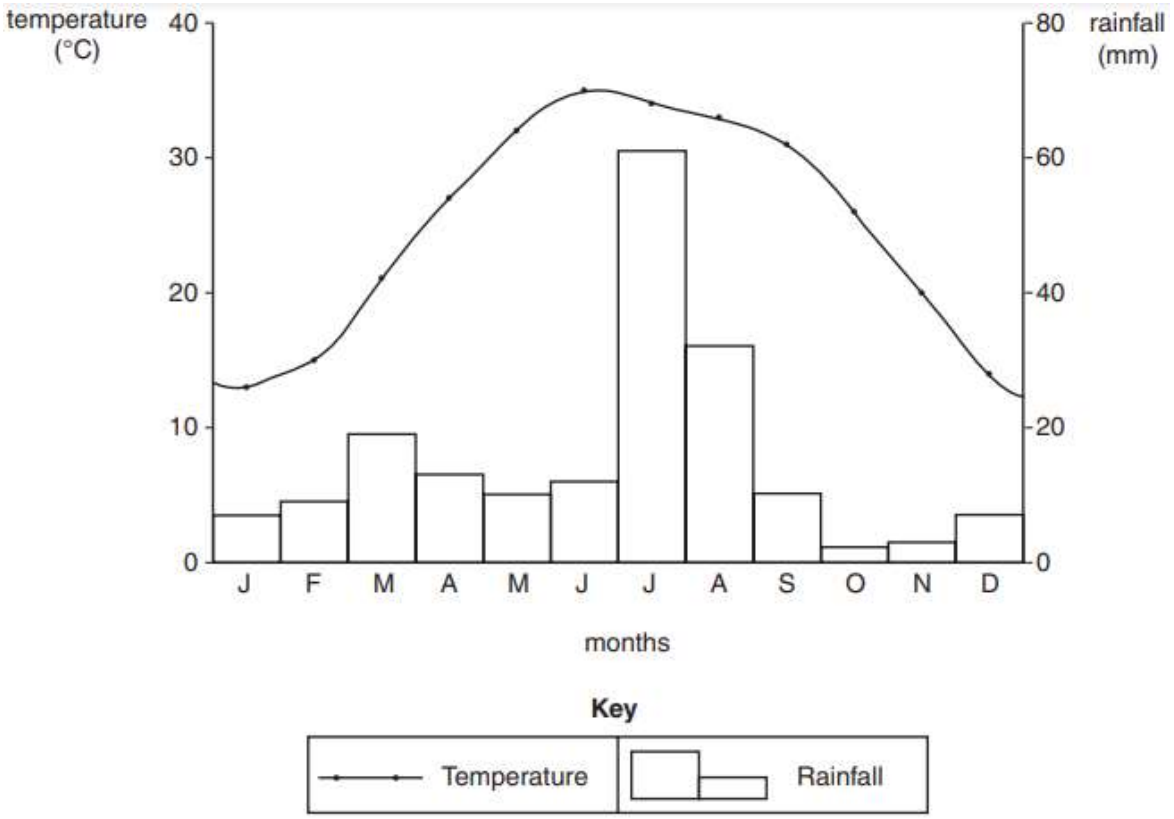

Fig. 2

(i) Explain why cotton is grown in this part of the Punjab. Refer to Fig. 2 in your answer. [5]

(b) (i) Explain how climatic hazards may destroy or reduce the yield of cotton on farms. [4]

(ii) Explain **two** other factors that may reduce the production of cotton in Pakistan. [4]

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SUGAR CANE

Type

- ✓ Kharif.

Uses

- ✓ Sugar.
- ✓ Brown sugar.
- ✓ Gur

By Products

- ✓ Bagasse, fibre left over. It is used to make paper, clipboard and animal feed.
- ✓ Molasses, liquid left over after crystallization of sugar.It is raw material for citric acid, yeast, rubber. It is also used as a fuel to generate electricity in sugar-mills.

Methods Of Cultivation

- ✓ Sugar-stalks 30 cm high are planted in April-May.
- ✓ A distance of 30 cm is kept between each stalks.
- ✓ Quality depends upon frequency of irrigation and fertilizers.
- ✓ If land is well irrigated then plant rise upto height of 6.7 feet and the crop can be ratooned and so harvested for 2-3 successive years.

Natural Inputs

- ✓ Alluvial soil.
- ✓ Deep soil.
- ✓ Firm soil to support tall stem.
- ✓ Hot growing season.
- ✓ Dry harvesting period.
- ✓ Atleast 500 mm rainfall.
- ✓ Over 1500 mm is ideal.
- ✓ Rain should not be excessive during ripening period because it may diluk sugar content.

Human Inputs

- ✓ HYV's.
- ✓ Pesticides.
- ✓ Irrigation.
- ✓ Labour.
- ✓ Machines.

Areas

- ✓ Nawabshah.
- ✓ Faislabad.
- ✓ East central Punjab.

Hyv

- ✓ JN-88
- ✓ Thatta-10

PRACTICE QUESTIONS 1.5

Question 1 N2017/P2/Q3/C(ii)

(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]

Question 2 N2013/P2/Q1/C(ii)-D

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

Climate .....

.....

.....

.....

.....

.....

Soil .....

.....

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.....

.....

.....[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]

Question 3 J2013/P2/Q3/C

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

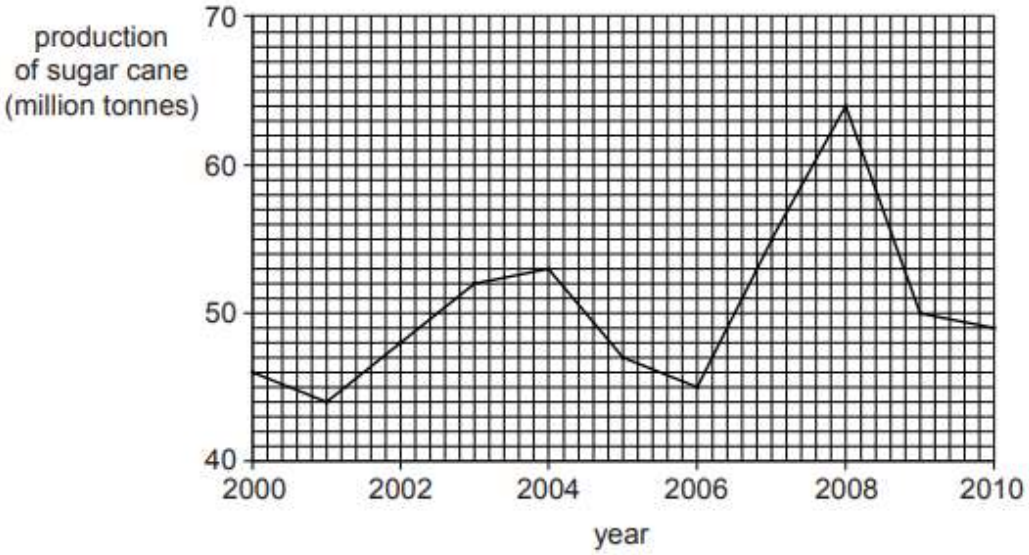

Fig. 4

(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]

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

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.....[4]

Question 4 N2009/P2/Q2/A-C

(a) Study Photograph A (Insert) showing a crop of sugar cane.

(i) Describe the appearance of this crop. [2]

(ii) Explain how the growth can be improved by

A irrigation
B fertilisers. [4]

(b) Explain how this crop is processed. [6]

(c) Study Fig. 4, a graph of sugar cane production.

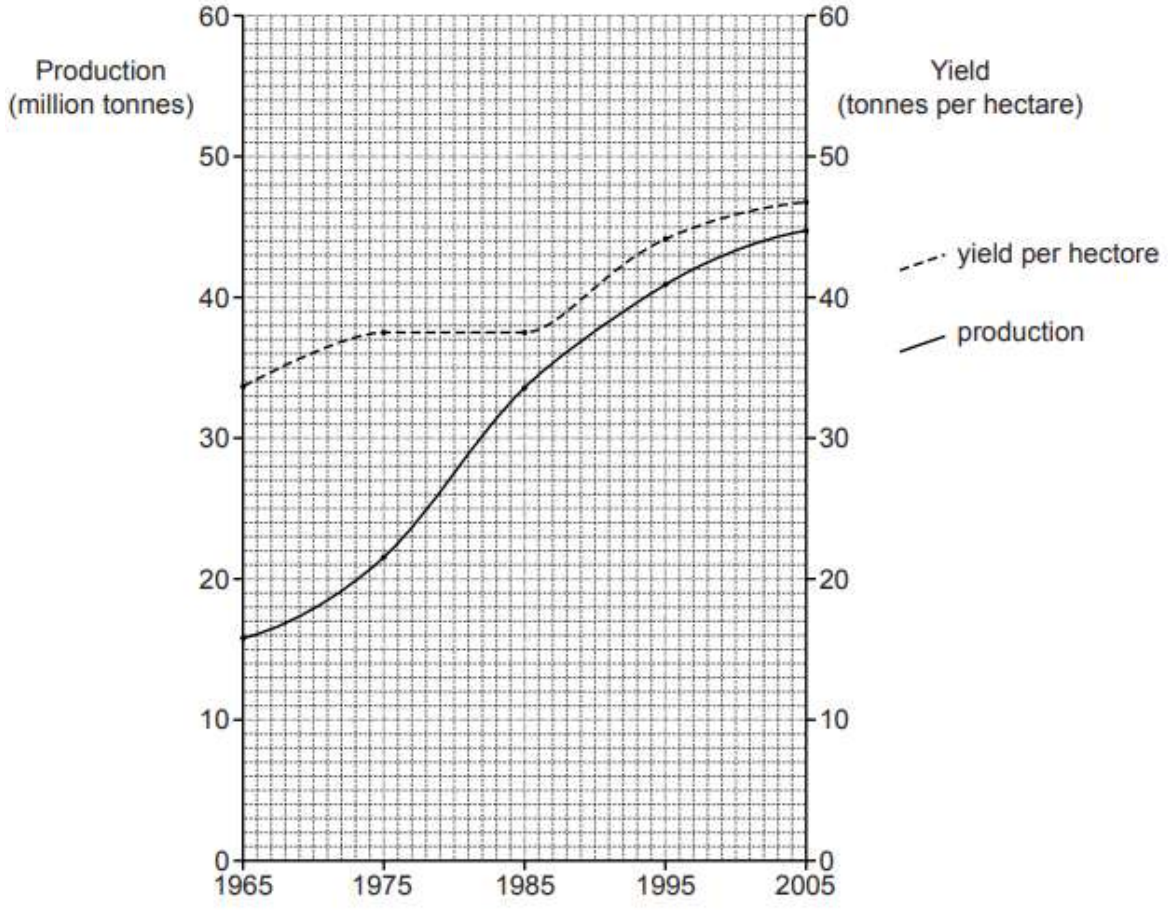

Fig. 4

(i) What was the increase from 1965 to 2005 in

A production?
B yield per hectare? [2]

(ii) Name an area of high sugar cane production. [1]

Question 5 J2006/P2/Q3/B

(b) Study Fig. 4, a map showing the distribution of sugar-cane farming.

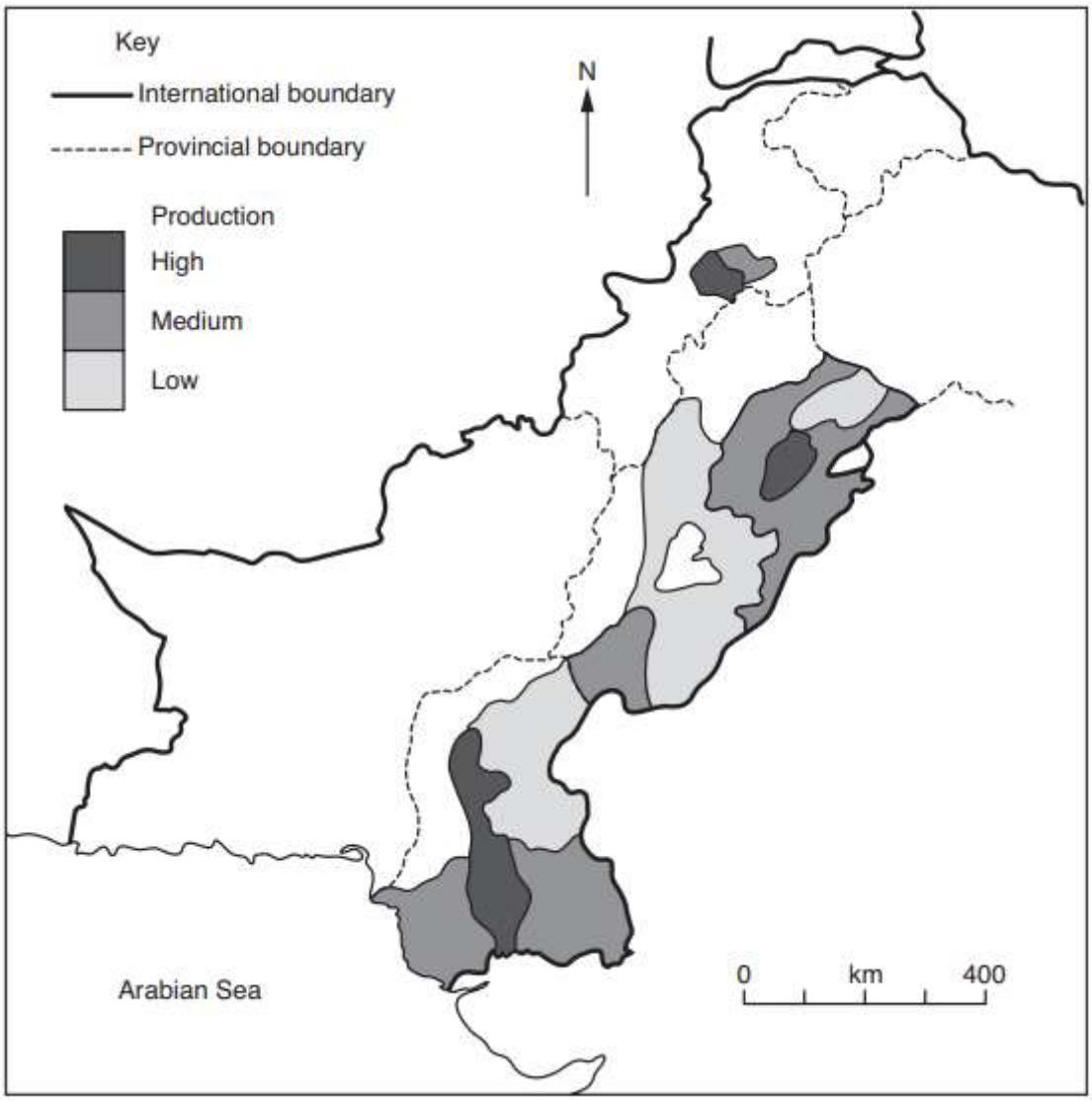

Fig. 4

(i) Name the areas of high sugar-cane production. [3]

(ii) Why are these areas suitable for the cultivation of sugar-cane? [4]

(iii) What happens to sugar-cane from the time it is fully grown to when sugar juice is extracted? [3]

(iv) Explain why bagasse is an important by-product of a sugar-cane factory. [2]

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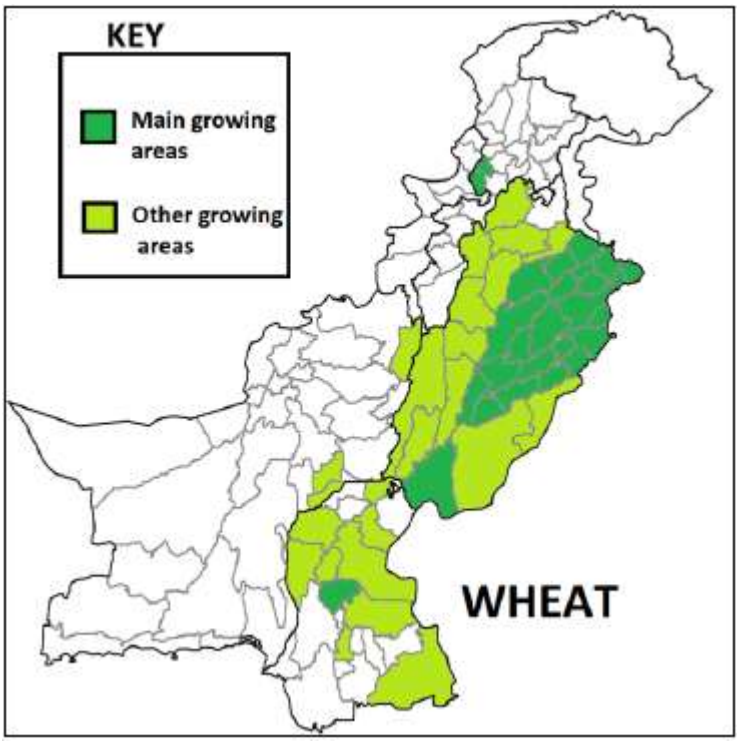
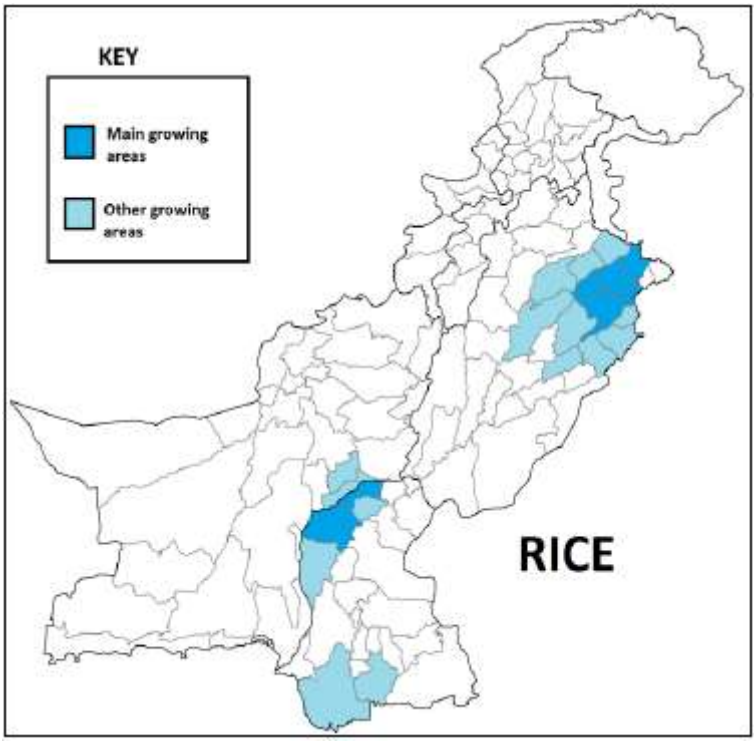
MAPS OF WHEAT/RICE/COTTON/SUGARCANE

Wheat



Rice



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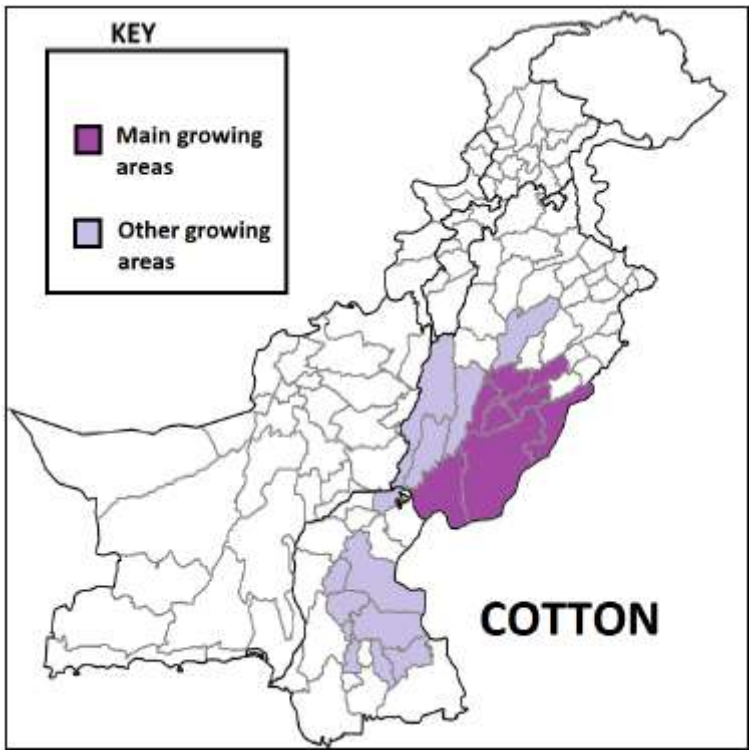
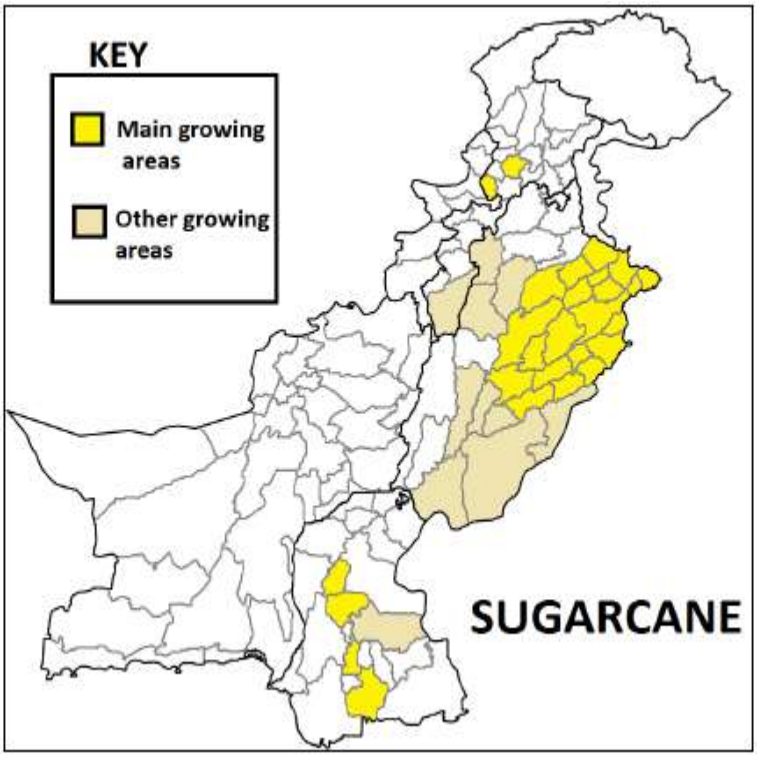
Cotton



Sugarcane



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MUHAMMAD YOUSUF MEMON

WHEAT/RICE/COTTON/SUGARCANE

Wheat

Rice

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MUHAMMAD YOUSUF MEMON

Cotton

Sugarcane

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PRACTICE QUESTIONS 1.6

Question 1 N2013/P2/Q1/E

(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]

Question 2 J2013/P2/Q3/A(i)

(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]

Question 3 J2010/P2/Q2/A

(a) Study Fig. 3, which shows the areas of cultivation for four main crops in Pakistan.

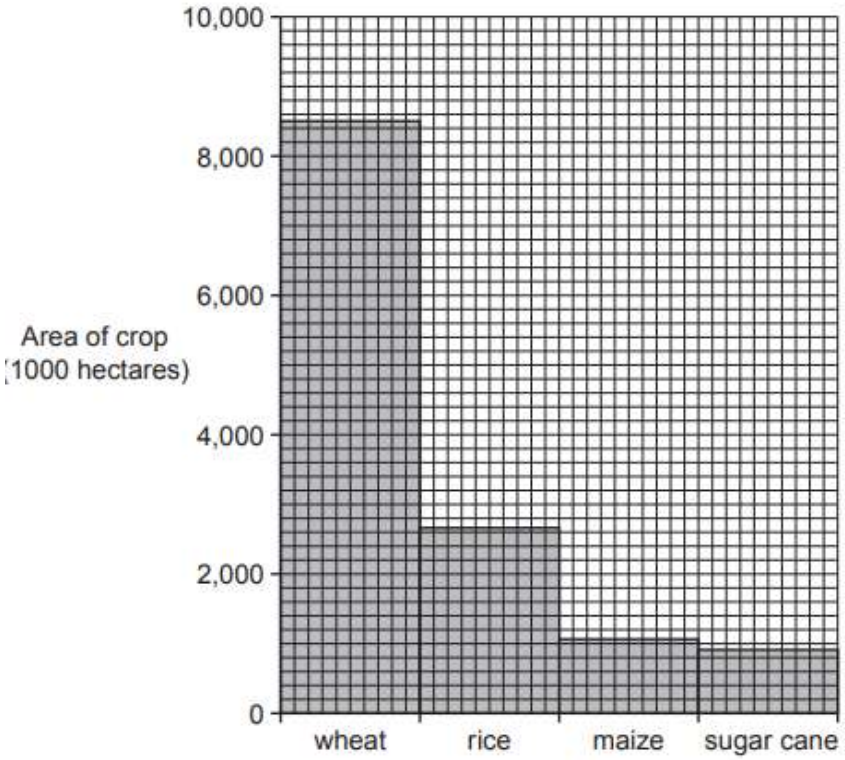


Fig. 3

(i) Which crop covers the greatest area? [1]

(ii) What is the area covered by this crop? [1]

(iii) Name **two** other food crops grown in Pakistan not shown on the graph. [2]

Question 4 J2006/P2/Q3/A

(a) Study Fig. 3.

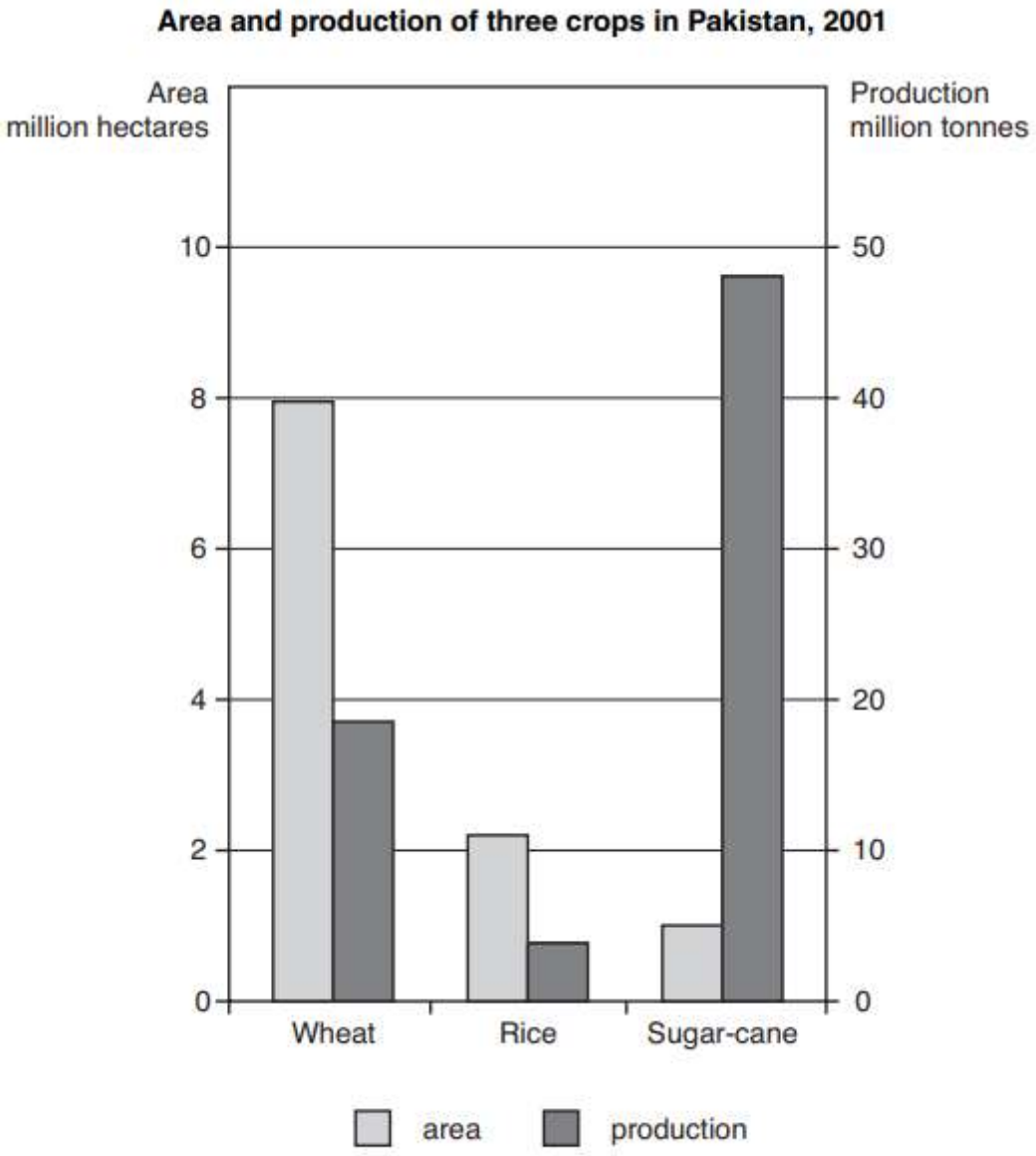


Fig. 3

(i) Which crop is grown on the largest area? [1]

(ii) Which crop has the lowest production per hectare? [1]

(iii) Why is there such a large production of sugar-cane from a small area? [2]

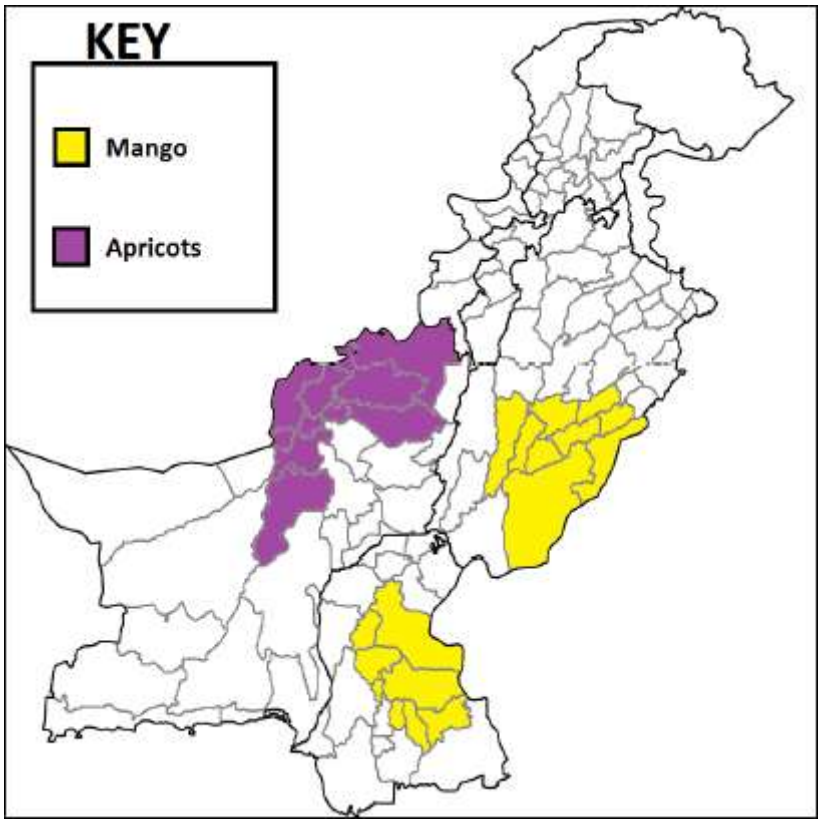
(iv) Name another cash crop grown in Pakistan. [1]

APRICOTS

- ✓ Apricots are grown mainly in areas of mid-northern Balochistan.
- ✓ Pakistan is the 4th largest producer of Apricots.
- ✓ The apricots need to fulfil chilling units, meaning that they must be exposed to cold for a certain period of time.
- ✓ Winters must be cold (but not colder than -30°C) to allow for proper dormancy.
- ✓ Dry weather must exist at the time of maturity/harvest.
- ✓ It is important that there should be no sudden and dramatic change in temperatures in spring which kills the flowers.
- ✓ Apricots grown in well drained soils with PH around 6.5

MANGOES

- ✓ Mango requires a wet hot summer season with rainfall around 250mm.
- ✓ This needs to be followed by a long dry winter.
- ✓ Dry winter means that the plant is less susceptible to attacks by fungus etc.
- ✓ It needs deep well drained loamy soil.
- ✓ Mangoes are grown in southeastern Punjab and eastern Sindh.

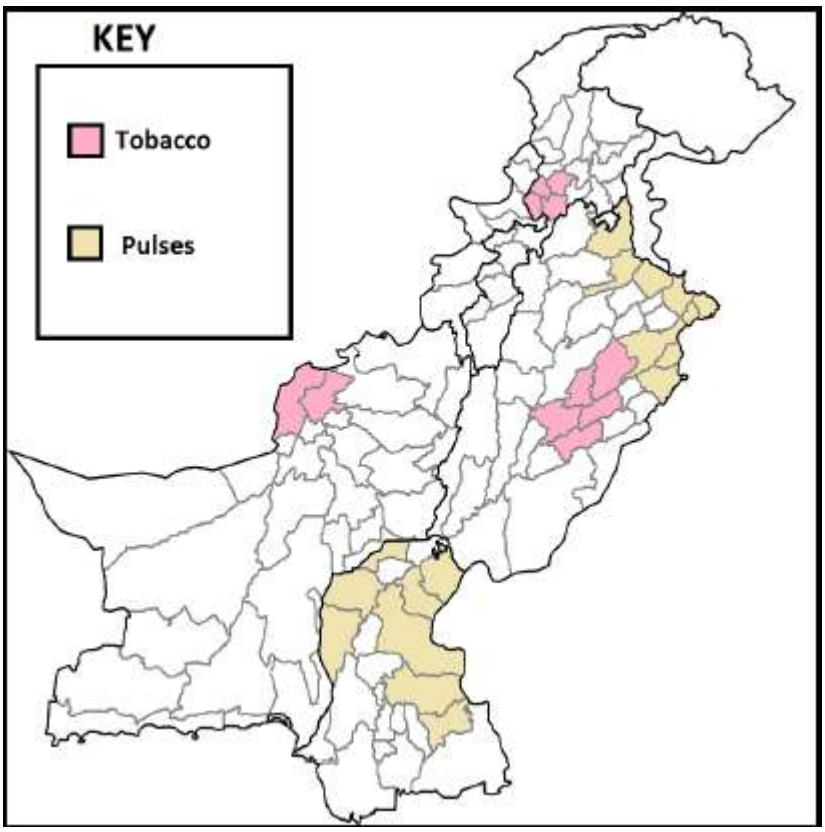


TOBACCO

- ✓ Tobacco plants are usually first grown in nurseries etc and then transplanted in the fields when the risk of frost has passed.
- ✓ They need light rainfall early on, followed by a period of bright sunshine with rains in between, followed by a dry period at harvest
- ✓ Tobacco is grown in central parts of Punjab, northern Balochistan and central parts of Khyber-Pakhtunkhwa

PULSES

- ✓ Pulses require high temperatures but are highly susceptible to frost.
- ✓ They can also tolerate high rainfall provided it doesn't come at time of pollination etc.
- ✓ Also the soil must not be waterlogged or saline. Pulses can be grown on sandy, loamy etc soils
- ✓ Pulses are grown in eastern and western Sindh, along with north eastern Punjab



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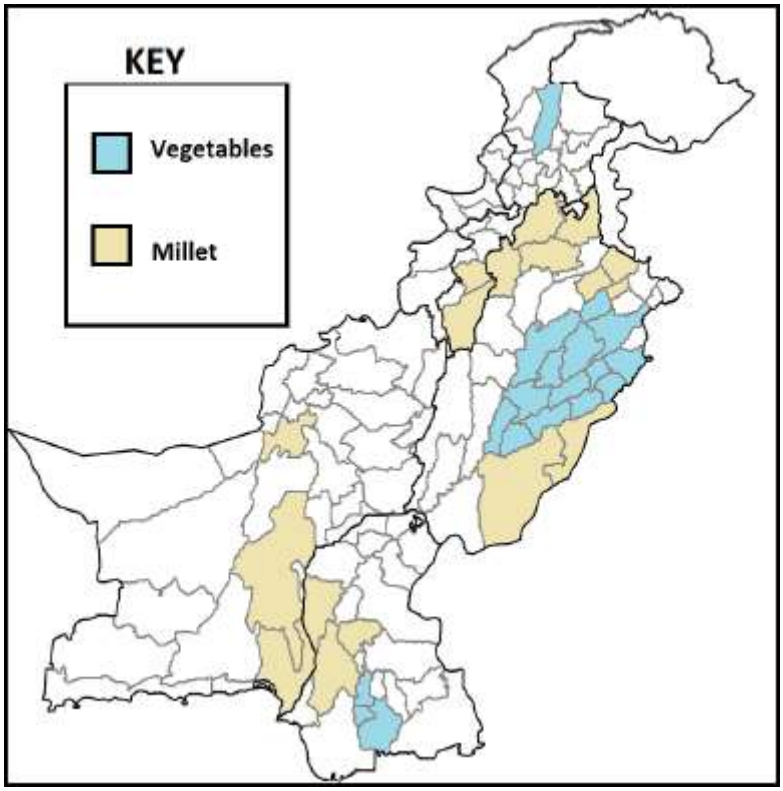
MILLET

- ✓ Millet requires moderate rainfall and is sensitive to frost.
- ✓ It will not tolerate waterlogged soils or harsh drought.
- ✓ They are grown in southeastern and northwestern Punjab, western Sindh, and central and southeastern Balochistan



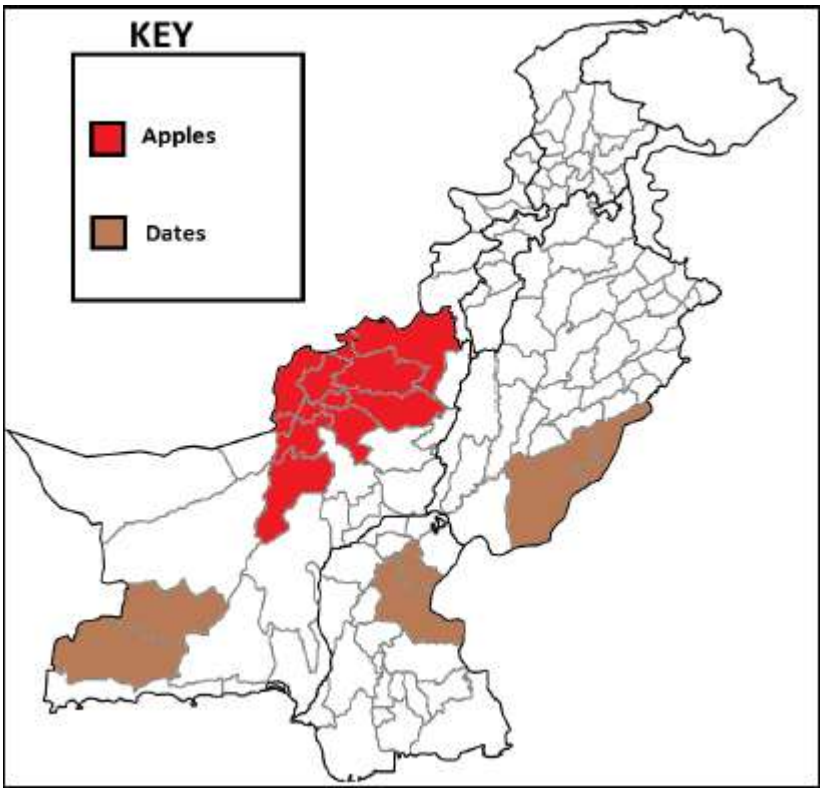
DATES

- ✓ Dates are grown in parts of Balochistan and in parts of Tharparkar desert (southern Punjab and eastern Sindh).
- ✓ It needs long hot summers with high day and night temperatures.
- ✓ It can tolerate fluctuations in temperature whether cold or hot.
- ✓ Mild winters and a dry sunny time for harvest is also required.
- ✓ They can grow in salty soils but they must be well drained

APPLES

- ✓ Apples are solely grown in northern Balochistan.
- ✓ They have the highest requirement of chilling units in fruits.
- ✓ Winters must be cold to allow for proper dormancy.
- ✓ These must be followed by rains during the growing season.

- ✓ Dry weather must exist at the time of harvest.
- ✓ Well drained loamy soils are best for growing apples

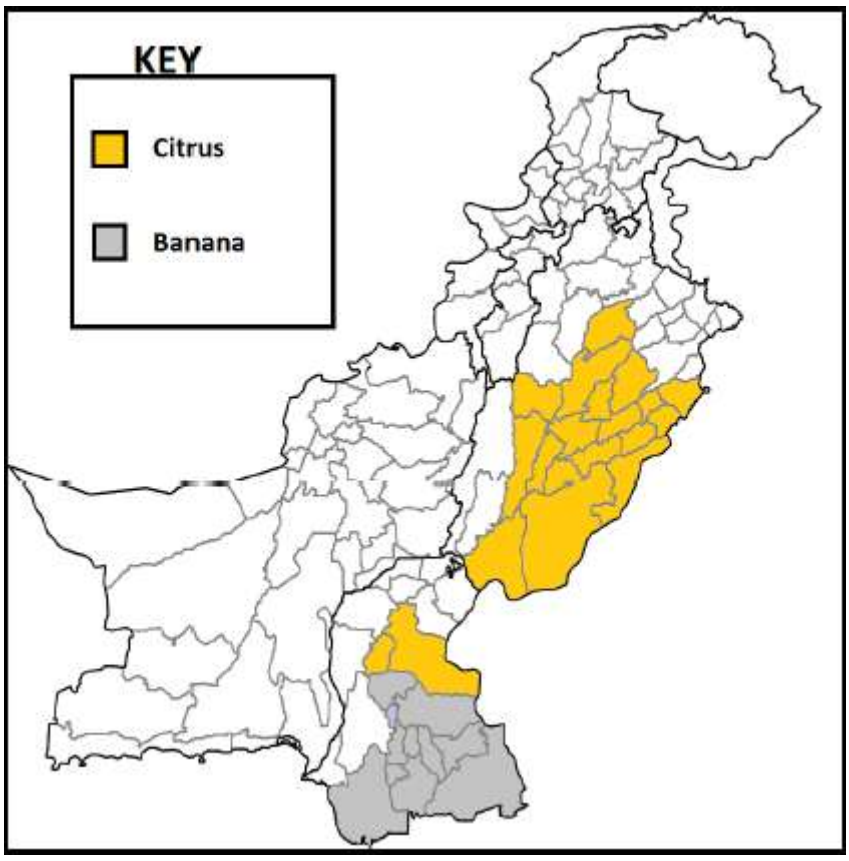


CITRUS FRUITS

- ✓ They grow in tropical or subtropical climate with hot summers and moderate rainfall.
- ✓ They are also sensitive to frost and strong winds.
- ✓ Most of the production is from Punjab including its central but mostly southern parts.
- ✓ Some citrus production also occurs in eastern parts of Sindh

BANANAS

- ✓ Bananas are grown exclusively in southern Sindh.
- ✓ They require a hot dry season lasting for around 2-3 months, with a mean rainfall of around 10 cm.
- ✓ Bananas are very sensitive to frosts, which can suspend maturity or even kill the plant.
- ✓ They are also very vulnerable to strong winds, which damage the fruit etc.
- ✓ They require well drained alluvial soils

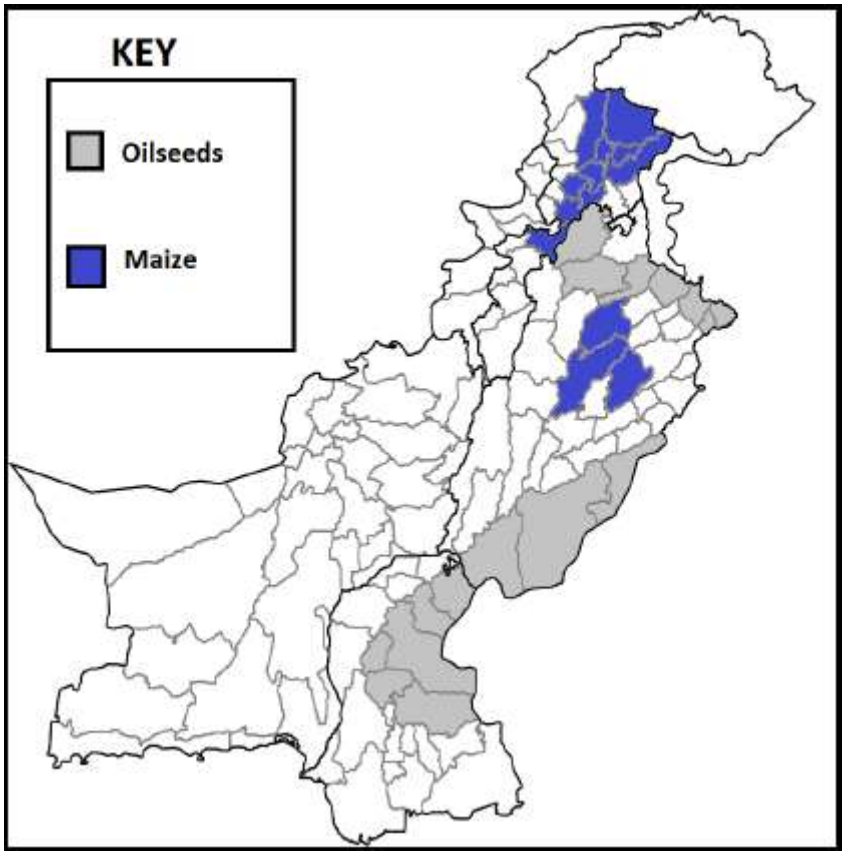


OILSEEDS

- ✓ Oilseeds usually require average temperatures varying from 20-30°C.
- ✓ It must also be noted that high temperatures can hamper or delay growth and that frost kills the plants.
- ✓ Oilseeds are tolerant to drought for some periods and require well drained deep alluvial soils
- ✓ They are grown in southern parts of Punjab and eastern parts of Sindh, along with some northern parts of Punjab.

MAIZE

- ✓ Maize needs a hot bright growing season to flourish.
- ✓ It is very intolerant to frost and needs moderate rainfall well distributed throughout growth.
- ✓ It also needs well drained deep alluvial soils
- ✓ It is grown in central Punjab and central parts of Khyber-Pakhtunkhwa


KEY
Oilseeds
Maize

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PRACTICE QUESTIONS 1.7

Question 1 N2017/P2/Q3/C(i)

(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]

Question 2 N2015/P2/Q3/B

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

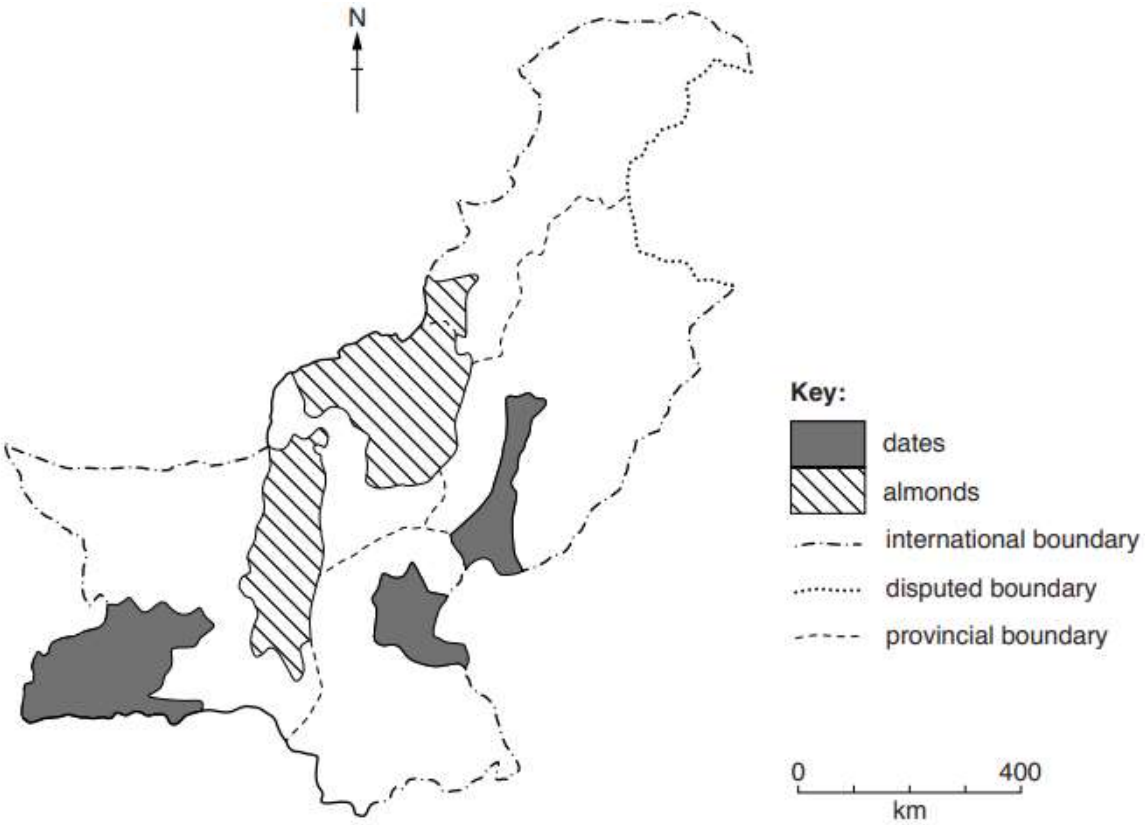

Fig. 6

(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.

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.....[4]

Question 3 J2011/P2/Q2/A

(a) **MAIZE** **PULSES** **MILLET** **OILSEEDS** **TOBACCO**

(i) Name **two** crops on the list that are used mainly for animal feed.

1 .....

2 .....[2]

(ii) Name **one** crop on the list that is **not** a food crop.

.....[1]

(iii) Name **one** crop that is rich in protein.

.....[1]

(iv) Name **one** type of oil seed.

.....[1]

Question 4 J2007/P2/Q2/A

(a) Study the map of Pakistan, Fig. 3.

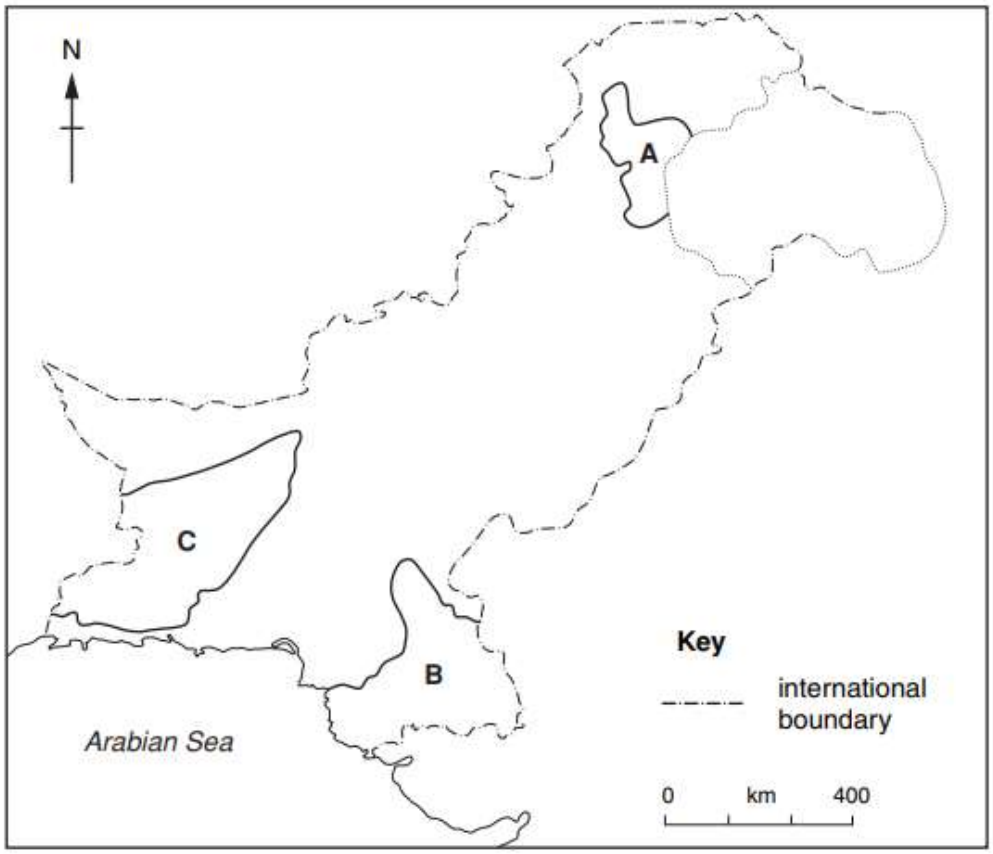

Fig. 3

(i) Name the **two** main fruit crops grown in area **A**. [2]

(ii) Why are fruit crops grown in mountain valleys? [3]

(iii) Name one of the main fruit crops grown in area **B**. [1]

(iv) Why are fruit crops grown in this area? [2]

(v) Why are fruit crops grown mainly for local use? [1]

LAND REFORMS

- ✓ The principle of dividing land for farming into small pieces so that more people can own some.

LAND CONSOLIDATION

- ✓ Land consolidation is a planned readjustment and rearrangement of fragmented land parcels and their ownership.
- ✓ It is usually applied to form larger and more rational land holdings.
- ✓ The government has introduced land reforms to consolidate the holdings of farmers, so that their far flung fields can be combined to form one big economically viable field.
- ✓ It thus becomes easier to use machines on it, obtaining loans becomes easier (as banks are more confident that farmer will be successful after using their money and will be able to repay the loan), farmer can experiment on his field and can ultimately save the time and hassle of working on multiple farms (this allows him more time to improve things like water supply to a single farm etc, all of which increase crop yields even further)

LAND FRAGMENTATION

- ✓ Land fragmentation can be defined as a situation where a farming household possesses several non-contiguous land plots, often scattered over a wide area.

GOVERNMENT EFFORTS

- ✓ Increasing the production of fertilizer.
- ✓ Distribution of improved seeds and regulation of quality seeds through government departments.
- ✓ Developing plant production programmes including regular checks for detection of pests.
- ✓ Providing advisory services.
- ✓ Making aerial sprays available.
- ✓ Providing financial resources.

PRACTICE QUESTIONS 1.8

Question 1 N2017/P2/Q3/B

(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 .....

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2 .....

.....[2]

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

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.....[1]

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

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Question 2 N2016/P2/Q4/B

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

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Question 3 N2012/P2/Q3/C

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

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Question 4 J2011/P2/Q2/C(ii)

(ii) To what extent can training and land reform be successful in increasing agricultural production?

Training .....

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Land reform .....

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Question 5 N2010/P2/Q5/B(iii)

(iii) In what ways can the government help small-scale farmers to mechanise their farms?

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Question 6 J2005/P2/Q3/C

(c) (i) What did the land reform laws aim to do? [1]

(ii) What are the advantages of land consolidation? [3]

SUSTAINABLE AGRICULTURE

- ✓ Supplying the agricultural product needs of the present generation while protecting agricultural product needs of those in the future

Possibilities

- ✓ Less overcropping / multicropping
- ✓ Methods of preserving soil e.g. terraces / contour ploughing
- ✓ Soil management through afforestation projects.
- ✓ Restrict use of heavy machinery
- ✓ Keeping vegetation cover
- ✓ Better water management / avoiding over watering / conserving water / lining canals
- ✓ Organic farming / using manure
- ✓ Use of appropriate knowledge / training
- ✓ Crop rotation.
- ✓ On farm waste recycling.
- ✓ Weed control by marching.
- ✓ Pest and disease control.
- ✓ Reclamation of deserts with help of irrigation schemes.

Difficulties

- ✓ High demand for more food
- ✓ Pressures on land e.g. for timber
- ✓ Lack of education and less awareness of sustainable methods
- ✓ Unco-operative landlords
- ✓ Land reform needed
- ✓ Lack of government will / support / investment
- ✓ Resistance to changing traditional / modern methods

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PRACICE QUESTIONS 1.9

Question 1 J2014/P2/Q4/E

(e) (i) What is meant by the term 'sustainable agriculture'?

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.....[1]

(ii) To what extent can agriculture be sustainable in Pakistan?

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LIVESTOCK FARMING

- ✓ This type of farming (also known as pastoral farming) is concerned with rearing of animals, whose products are then sold.

NOMADIC FARMING

- ✓ Nomads are the people who move from one place to another place along with their livestock in search of water and pasture.
- ✓ Once they find these resources and settle over there and utilize their resources
- ✓ They move to another place so that's why they keep on moving for the search of new pastures.
- ✓ They hardly return to the old pastures unless rainfall takes place for new pastures to grow.
- ✓ The area in which they graze have very poor pastures because of extreme arid conditions.
- ✓ They keep sheep, camels and goats because they can survive in arid conditions and can survive in poor pastures as they can nibble the thin glass.

Advantages

- ✓ Free access to pastures from open fields.
- ✓ Low cost of inputs.
- ✓ Source of income.
- ✓ Dung for soil.
- ✓ Don't need to hire labour.

Disdvantages

- ✓ Don't have veterinary facilities.
- ✓ Don't have permanent places to live.
- ✓ Have to search for food for long distance.
- ✓ Unreliable income.
- ✓ Soil erosion.

Inputs

- ✓ Livestocks.

- ✓ Pastures from open fields.
- ✓ Water from oasis, wells, karez, ponds, lakes.
- ✓ Tents for shelter.
- ✓ Family labour.

Processes

- ✓ Natural breeding.
- ✓ Grazing.
- ✓ Migration for water, pasture.
- ✓ Milking manually.
- ✓ Collecting manure for fertilizer, fuel.
- ✓ Preserving meat.

Outputs

- ✓ Meat.
- ✓ Wool.
- ✓ Livestock.
- ✓ Manure.
- ✓ Milk.
- ✓ Income.

Environmental Problems

- ✓ Soft erosion.
- ✓ Desertification.
- ✓ Deforestation (damage to young trees).

Why Many Nomads In Baluchistan?

- ✓ Shortage of resources.
- ✓ Cultivation of crops is difficult or impossible.
- ✓ Rugged landscape.
- ✓ Population density is least so plenty of land is available.

TRANSHUMANCE

- ✓ It is seasonal migration along with the livestock especially in winters from highland areas to the valley.
- ✓ When the summer approaches they move back to the high land pastures, but below snow line.
- ✓ In winter high land pastures are covered with snow and water sources also freezes so that's why they move to valley where temperature are suitable for them to survive and water, pastures are available.
- ✓ Sometimes they move to village market for selling their surplus such as animals, wools, skin and milk.
- ✓ In summer they move back to high land pastures below snowline because in summer rich pastures grow as snow and glaciers melt so therefore water is available.
- ✓ They are mainly found in N.mountain and western highlands
- ✓ From Himalayas they migrate towards to Kashmir valley.
- ✓ From Hindukush to Chitral and Swat valley.
- ✓ They keep sheep, goat, cattle, yak as these animals can adapt in highland climate and mountainious topography.

Advantages

- ✓ Good access to rich pastures.
- ✓ Good accessibility of water.
- ✓ Do not have to travel long distances.
- ✓ Source of income.
- ✓ No need to hire labour.
- ✓ Requirement of food and clothes fulfilled.

Diadvantages

- ✓ Lack of facilities.
- ✓ No permanent home.
- ✓ Unreliable income.
- ✓ Poor quality animals.

Inputs

- ✓ Livestock.
- ✓ Pastures.
- ✓ Water.
- ✓ Labour.

Processes

- ✓ Breeding.
- ✓ Grazing.
- ✓ Milking.
- ✓ Slaughtering.

Outputs

- ✓ Meat.
- ✓ Wool.
- ✓ Milk.
- ✓ Manure.

SETTLED

- ✓ They do not move, they have permanent homes.
- ✓ They are found in villages of sindhs and Punjab along rivers and on doabs.
- ✓ They keep cow, hens, goat, buffaloes, bullocks.

Advantages

- ✓ Own grazing ground known as shanilat.
- ✓ Do not move long distance.
- ✓ Reliable source of water.
- ✓ Proper sheds.
- ✓ All sources of inputs available.

Disdvantages

- ✓ Area which can be used for cultivating crop is utilized for grazing ground.
- ✓ Lack of nutritional fodder.
- ✓ Lack of investment.
- ✓ Poor quality animal.
- ✓ No experience.
- ✓ Unreliable source of income.

Inputs

- ✓ Grazing grounds.
- ✓ Water.
- ✓ Labour.
- ✓ Shed area

Processes

- ✓ Natural breeding.
- ✓ Milking manually.
- ✓ Collecting, manure, eggs.
- ✓ Slaughtering

Outputs

- ✓ Meat.

- ✓ Livestock
- ✓ Manure.
- ✓ Eggs.
- ✓ Milk.
- ✓ Wool.

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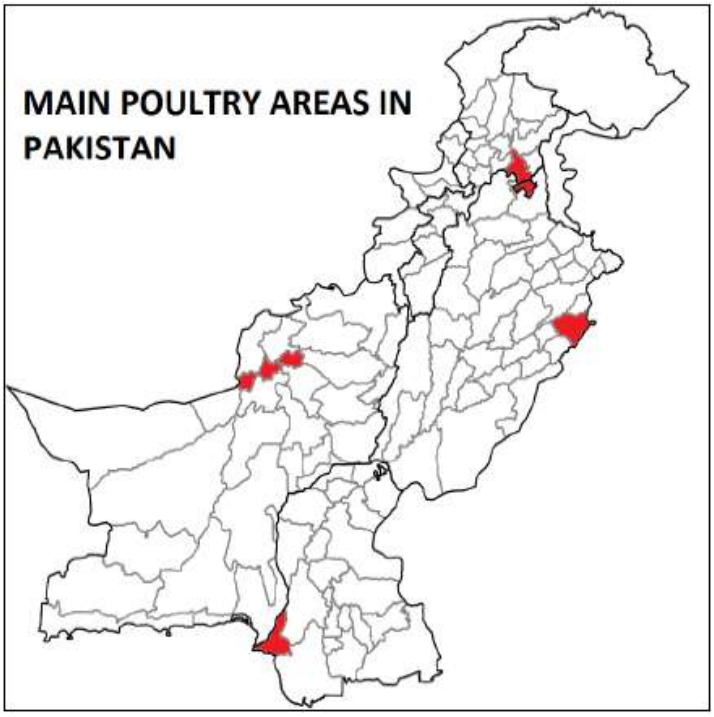
POULTRY FARMING

- ✓ Poultry farming is the practice of raising poultry, such as chickens, turkeys, ducks, and geese, as a subcategory of animal husbandry, for the purpose of farming meat or eggs for food.
- ✓ In Pakistan, most of poultry farming consists of chicken.
- ✓ Poultry farms are mostly found around dense centres of population (Karachi, Quetta, and Lahore) and cooler areas (Murree, Abbottabad).
- ✓ Nearness to population centres reduces cost of transportation and cooler areas are preferred for optimal growth of chickens.

Steps Followed In Poultry Farming

- ✓ First the poultry farm building is cleaned properly, disinfectant is applied and the building is fumigated.
- ✓ Maize is used as food, when the chicks arrive they are given antibiotics in their food for 3-7 days.
- ✓ The temperature of the building is maintained between 32 and 37 degree Celsius.
- ✓ The chickens are put in cages so their eggs and wastes can be easily removed etc.
- ✓ After around 4-8 weeks the chickens can be slaughtered for their meat



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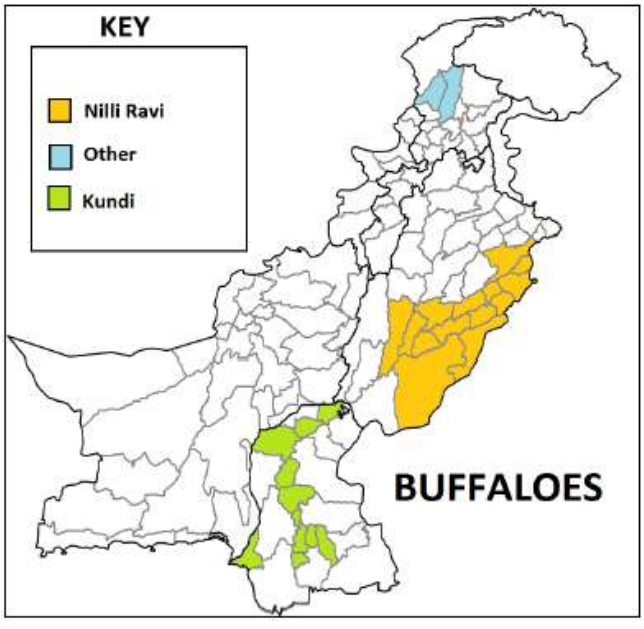
BUFFALOES

- ✓ Buffaloes are found mostly in canal fed areas of Pakistan, especially the doab between Ravi and Sutlej.
- ✓ Nilli-Ravi breed is found in Punjab, which is known for its high milk production.
- ✓ In Sindh, Kundi breed is found along both banks of Indus but mostly in Northern and central Sindh.
- ✓ Other breeds are found in areas of Khyber-Pakhtunkhwa
- ✓ Presence of water is very important as this animal needs to cool itself by smearing mud on its body.
- ✓ Water is also used for drinking and for cleaning the farm etc.
- ✓ A lot of fodder is also required (which becomes expensive to buy in non-agricultural areas) and thus buffaloes are not found in Balochistan as this would be too uneconomical.
- ✓ There are less urban areas there and thus les demand for beef.
- ✓ Buffaloes are considered to be black gold of Pakistan because the milk they produce has a higher fat content than that of cows and goats etc.
- ✓ At present, buffaloes provide almost 70% of the milk produced in Pakistan.
- ✓ Also, their meat is white and desirable due to the low cholesterol level as compared to cow's meat
- ✓ However, it must be noted that still there is ample room for improvement.
- ✓ Pakistan is the 2nd largest buffalo milk producer in the world after India.
- ✓ Also, Pakistan has one of the best breeds for producing milk (like Nilli and Ravi) but due to mismanagement, inefficient marketing system, old livestock technique, exposure to heat, shortage of fodder and late age of maturity mean that this potential is yet to be exploited



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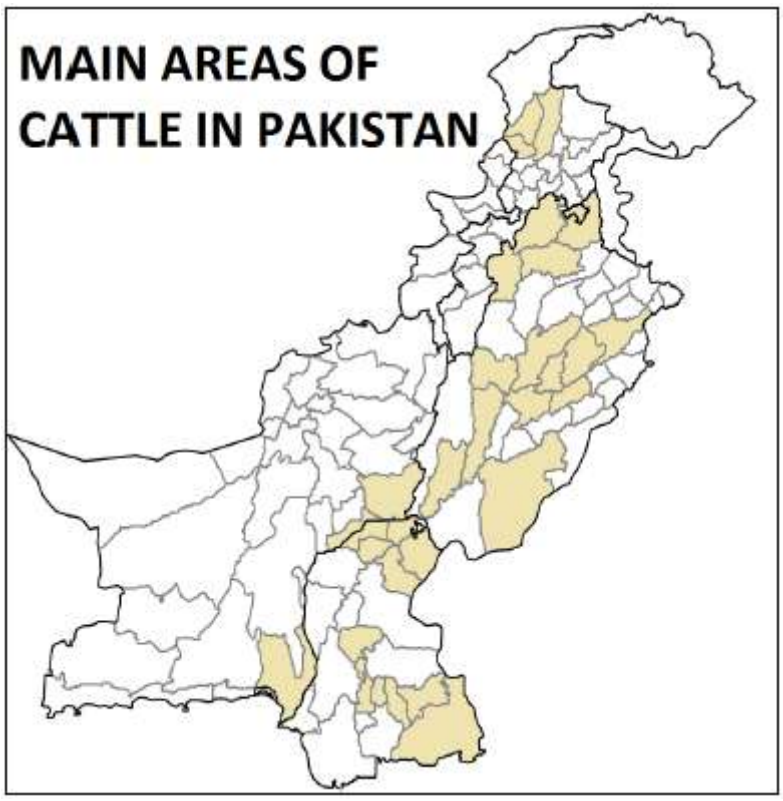
CATTLES

- ✓ Important cattle breeds are Red Sindhi and Sahiwali, which are internationally recognized for their milk production.
- ✓ Another important Breeds are bhagnari (Imp for draft power found in Punjab and sindh), Dhani (Imp for draft power found in N.Areas)
- ✓ Cattle are spread in Northern, central and Southern Punjab.
- ✓ In Sindh mainly in areas of Tharparkar desert.
- ✓ In Balochistan they are found in district of Hab and in Northcentral parts of Khyber-Pakhtunkhwa
- ✓ The yield of dairy animals in Pakistan is around 1/5 to 1/7 as to what yields are achieved in Europe and United States of America.
- ✓ If our yields can be improved this can save us from import of milk and related products, which costs around 20 million dollars annually.



GOATS

- ✓ Goats have a much wider distribution than sheep in Pakistan.
- ✓ They are found in almost whole of Punjab, Eastern and Southern Sindh, Makran coast and central Balochistan and districts of Peshawar and Mardan in Khyber-Pakhtunkhwa.
- ✓ Goats are also very adaptable like sheep but since their meat and milk is preferred over sheep; to satisfy this demand they are reared in larger numbers as compared to sheep

SHEEP

- ✓ Sheep are mostly found in rugged areas of Northern Balochistan, Gilgit-Baltistan, Khyber-Pakhtunkhwa and parts of Southern Punjab.
- ✓ Sheep can survive both hot and cold seasons, and feed on shrubs and grasses.
- ✓ These adaptabilities make them vital for people living in these areas for meat, milk, wool, bones etc

SHEEP AND GOAT

- ✓ The consumption of mutton is also increasing in Pakistan due to increasing population.
- ✓ Much of meat produced in Pakistan is also exported to countries like Saudi Arabia, Oman and UAE.
- ✓ The demand of wool is also increasing but the wool sector is still very much neglected.
- ✓ Goats and sheep along with poultry are the backbone of small rural households, which use eggs and meat along with milk for their sustenance.
- ✓ But no real attention is being paid toward this sector; there is no proper system of breeding at organizational level, shortage of fodder and droughts in areas of Balochistan and Sindh means that supplies of fodder are being exhausted.
- ✓ Thus farmers are forced to make sure that their animals survive by grazing a same piece of land again and again.
- ✓ This leads to desertification and subsequent problems of erosion and advancement of sand dunes, which wreck agricultural fields further inland by covering them with sand.
- ✓ To prevent this problem the government encourages the keeping of stall fed goats but due to problems like lack of disease management services, such high density collection of animals is risky

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SUBSISTENCE LIVESTOCK FARMING

- ✓ In it animals are kept to do daily tasks and provide daily food requirements usually by a subsistence farmer (agriculture one).
- ✓ Animals include chicken, buffalo, cow, sheep and goats albeit on a very small scale.
- ✓ Chicken provide eggs and meat, cows provide milk whereas the bull (male cow) is used for ploughing and transport (during planting, growth and harvest of crop).
- ✓ The manure is also used as fertilizer for crops.
- ✓ A pair of two bulls is known as a bullock.

COMMERCIAL LIVESTOCK FARMING

- ✓ Cows and buffaloes are raised in an organized manner for commercial purposes.
- ✓ It can be very profitable for small land owners, giving higher returns as compared to traditional farming methods, as land requirements are low.
- ✓ The fodder can be grown on the fields and then fed to dairy animals.
- ✓ The animals are also given a ration of special protein rich diet along with vaccinations to protect from infections etc, which can affect production of milk.
- ✓ If bigger dairy farms are established then the milk can be processed and packed too thus adding value to it.
- ✓ When the cow stops producing milk it is slaughtered along with other bulls for their meat, which is then sold in the market to earn a profit
- ✓ Dairy farms are important in Pakistan around big cities like Karachi etc.
- ✓ These farms provide milk regularly and cheaply due to the small distances involved.
- ✓ Meat and hides are also provided.
- ✓ Hides are used by leather industry and milk is used to make ghee.
- ✓ Furthermore, the dung can be sold and used in place of firewood etc

PROBLEMS OF LIVESTOCK

- ✓ Few veterinary facilities
- ✓ Lack of grazing grounds
- ✓ Expensive and difficult to keep in urban areas

- ✓ Lack of marketing facilities
- ✓ Lack of facilities for storage
- ✓ Old methods of breeding
- ✓ Unhygienic conditions
- ✓ Desertification due to overgrazing
- ✓ Lack of investment
- ✓ Disease transfer to humans.

IMPROVEMENT IN LIVESTOCK

- ✓ Capital, investment, loan subsides
- ✓ Selective, cross breeding
- ✓ Better feed
- ✓ More grazing land
- ✓ Control of disease
- ✓ Vaccination
- ✓ Better hygiene, care
- ✓ Mechanization.

PRACTICE QUESTIONS 1.10

Question 1 N2017/P2/Q1/B(ii)

(ii) Describe the ways that **human** factors can improve the production of livestock farming in Pakistan.

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Question 2 J2017/P2/Q1/C

(c) Study Photograph A (Insert).

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

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.....[2]

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

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.....[2]

Question 3 N2016/P2/Q2/B

(b) Study Photograph C (Insert).

(i) Name the type of livestock shown in this photograph.

.....[1]

(ii) Why is this type of livestock valuable to the farmer?

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.....[3]

(iii) What environmental problems can be caused by keeping this type of livestock?

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.....[2]

Question 4 N2015/P2/Q3/D

(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?

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Question 5 N2014/P2/Q3/C

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

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

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Question 6 J2012/P2/Q2/D

(d) (i) What is the meaning of the following livestock farming terms:

A Transhumance?

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B Nomadic farming?

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.....[2]

(ii) What are the advantages and disadvantages of these types of livestock farming in **either** mountain **or** desert areas?

Advantages .....

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Disadvantages.....

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Question 7 N2011/P2/Q4/A

(a) Study Photograph B (Insert).

(i) What are the animals shown in the photograph?

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(ii) Describe the topography (relief) and vegetation of the area shown in the photograph.

Topography (relief) .....

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Vegetation .....

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.....[3]

(iii) Explain why these animals are reared in a nomadic way in arid areas.

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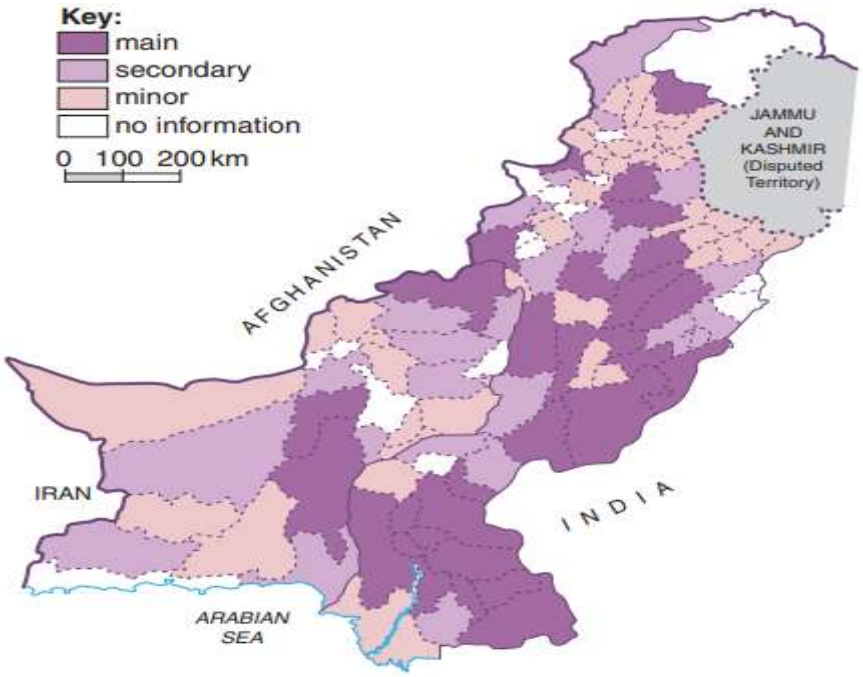
Question 8 N2010/P2/Q2

(a) Study Fig. 4 (Insert), which shows patterns of goat rearing in Pakistan.



(i) Describe the distribution of goat rearing in Balochistan.

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.....[3]

(ii) Suggest why the government of Pakistan discourages the rearing of goats.

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(iii) Why are there many nomadic farmers in Balochistan?

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(b) Explain why buffalo are not reared in Balochistan.

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(c) Study Photographs A and B (Insert) showing a buffalo farm in Lodhran district, Punjab.

(i) How do the photographs show that these buffalo are being kept in good living conditions?

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(ii) Suggest why buffalo farms can often be found around urban areas.

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(d) Meat provides a valuable source of protein in food, and there are many other useful products from animals.

Explain the advantages and disadvantages of developing livestock farming in Pakistan.

Advantages .....

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Disadvantages .....

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Question 9 J2008/P2/Q1/C-D

(c) (i) What work is done on the farm by these animals, other than that shown in the photograph? [3]

(ii) What do these animals and other livestock on the farm produce that the farmer can use or sell? [3]

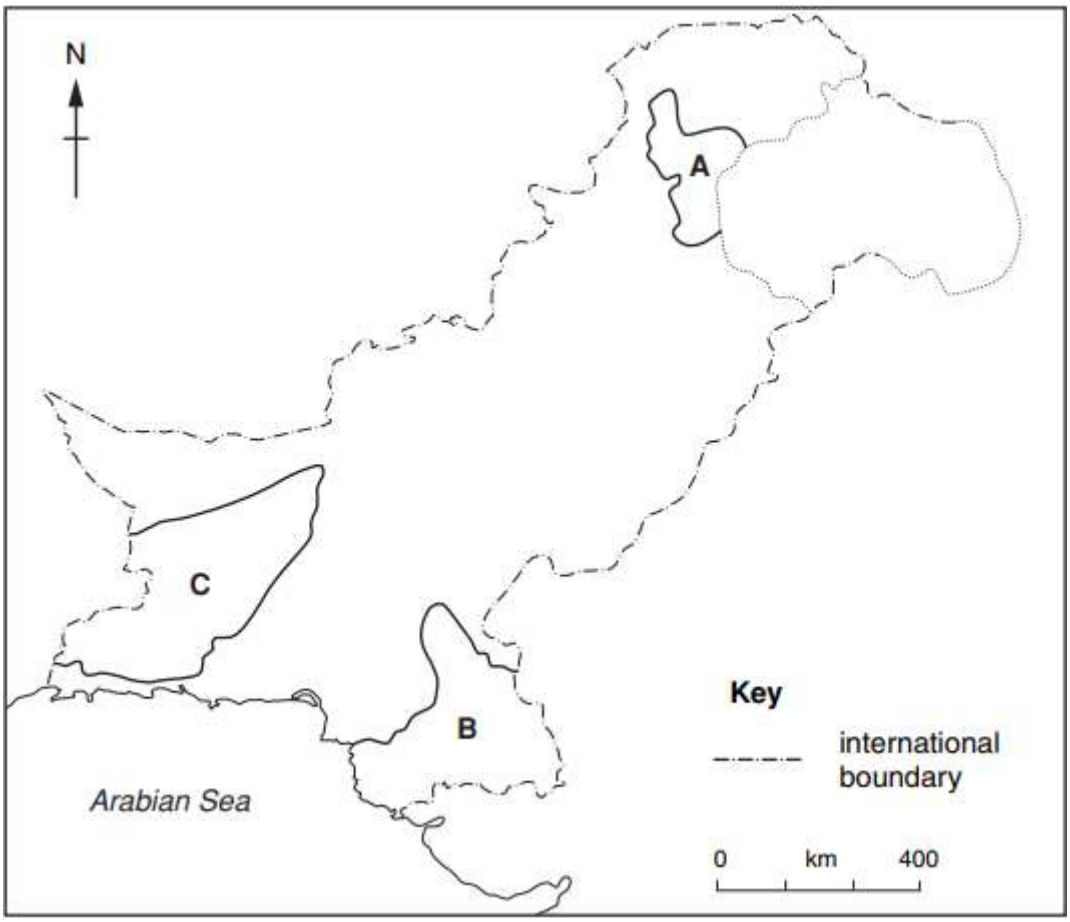
(d) How can livestock farming be improved in Pakistan? [5]

Question 10 J2007/P2/Q2/C

(c) (i) Name **two** animals that are reared by nomads in area **C**. [2]

(ii) Explain the importance of livestock to the nomads. [2]

(iii) Describe the nomadic method of farming. [3]



Question 11 N2005/P2/Q2/A

(a) Study Photograph A (Insert 1) of a valley in the Hindu Kush.

(i) Name this type of animal. [1]

(ii) Suggest why these animals were taken here. [2]

(iii) What type of farming is this? [1]

(iv) Give **two** outputs of this farming system that can increase the income of the farmer. [2]

REVIEW EXERCISE

Question 1 N2017/P2/Q3/D

(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.

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Question 2 J2017/P2/Q1/D

(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.

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Question 3 N2016/P2/Q4/D

(d) Read the following two views:

A

Pakistan should plant more cash crops on its land to generate export earnings.

B

More land should be used to grow crops to feed the growing population of Pakistan.

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

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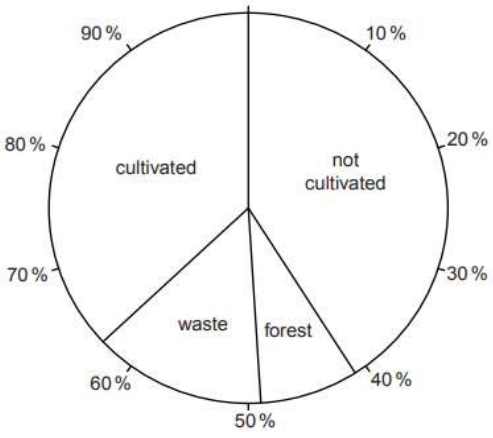
Question 4 N2012/P2/Q3/B

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



(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.

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

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Question 5 J2010/P2/Q2/C-D

(c) Waste products from food crops such as straw from cereals and bagasse from sugar cane have some uses.
Explain the importance of waste products such as these. You may refer to those crops shown in Fig. 3 or others. [3]

(d) Read the extract below.

> The farming land in barani areas such as the Potwar Plateau is subjected to soil erosion, overgrazing, and desertification due to poor farm management.
> This leads to low crop productivity, poor quality livestock and low farm incomes.

(i) What reasons does the writer give for the low farm incomes in barani areas? [3]

(ii) Explain these and other causes of low farm incomes in Pakistan. [5]

RECENT PAST PAPER QUESTIONS

Question 1 J2018/P2/Q3

(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.

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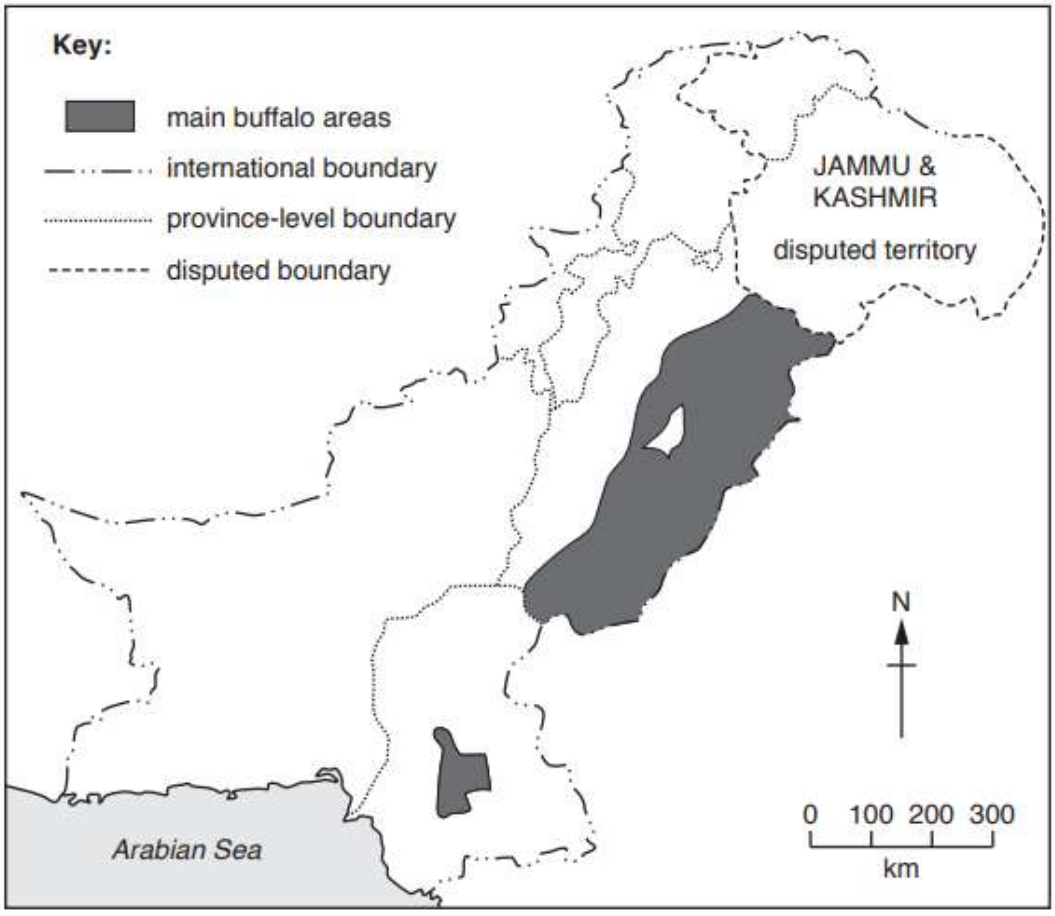
.....[3]

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



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

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.....[3]

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

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.....[2]

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

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.....[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.

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.....[6]

Question 2 N2018/P2/Q1

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

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MUHAMMAD YOUSUF MEMON

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.

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.....[4]

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

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.....[4]

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

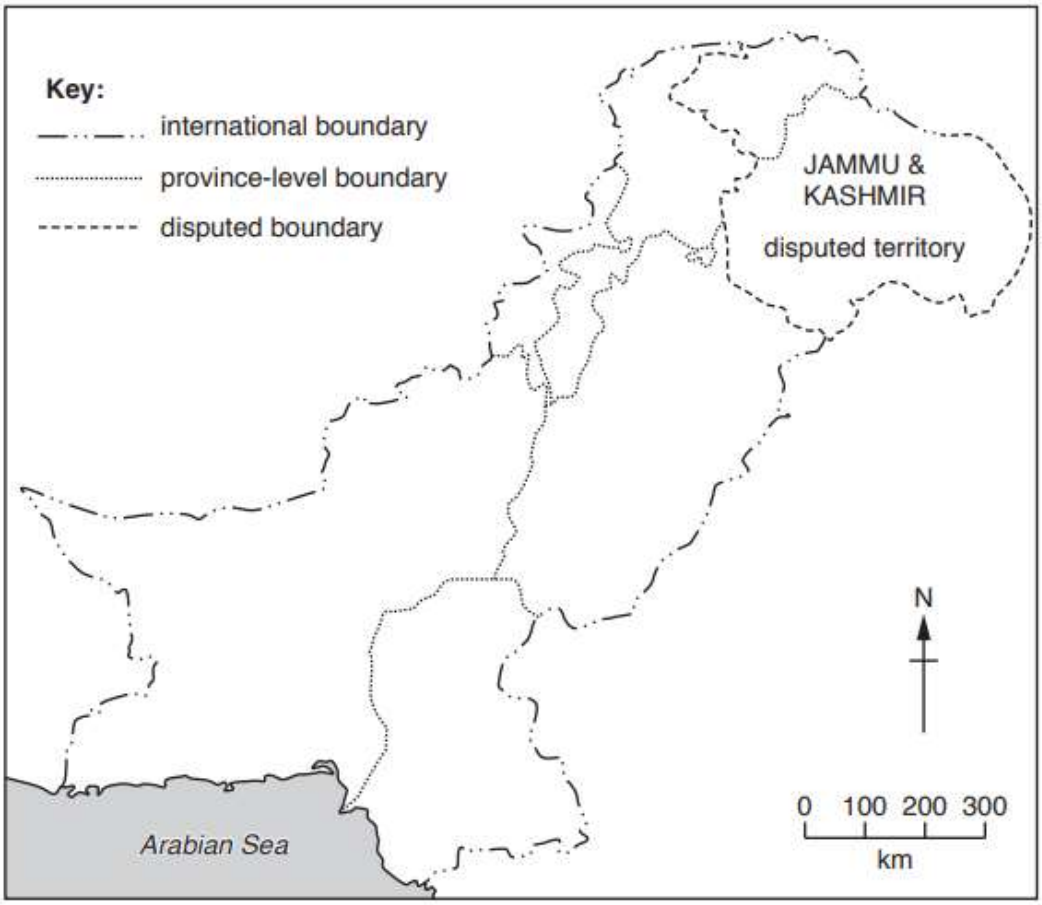

Fig. 1.5

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.

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.....[6]

ANSWER KEY

Practice Questions 1.1

Question 1 — N2017/P2/Q3/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

Question 2 — J2017/P2/Q1/A

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

Subsistence: Rice/vegetables/wheat;
Cash: Rice/sugar cane/oilseeds/cotton/wheat.

2 @ 1 mark

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

Question 3 J2017/P2/Q4/B(ii)

- Cause pollution of rivers/watercourses (runoff from farmland containing chemicals washes into them);
- Pollution of groundwater (from infiltration eventually entering rivers, polluting them);
- Eutrophication in rivers (nitrates/phosphates cause algal blooms which increase CO_2/reduce O_2)/(killing fish/aquatic animals/destroy aquatic life);
- Causes ecosystem to be unbalanced (through loss/ extinction of species) (through disruption to food chains/ food webs);
- Overuse of fertilisers (damages soil/makes soil infertile/ poisons/damages natural vegetation).

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

Question 4 N2016/P2/Q1/B

(b) Study Photographs A and B (Insert) which show parts of the lower Indus valley. Using the photographs and your own knowledge, explain the advantages for agriculture in areas like this. **[4]**

Near to river / lake / water source (for ease of irrigation / plentiful water for sugar cane or cotton)
[Active / old] flood plain (allows floods to spread over a large area)
River floods regularly / every 1–8 years (e.g. depositing alluvium / providing water and nutrients / which is useful for rice / suitable for Buffalo to wallow idea)
Alluvium / fertile soil (to increase crop yields)
Wide area / floodplain / space / up to 40 km wide (which provides large area of land for intensive cropping)

Flat (e.g. for ease of cultivation / easy to grow crops / easy to use machinery / easy for cattle to graze) (2 + 2)

Maximum of 2 + 2 (mark + development mark)

Question 5 N2015/P2/Q3/C

(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

Question 6 N2014/P2/Q3/B

(b) (i) In the list below circle <u>three</u> inputs used mostly for cash crop farming. **[3]**

Chemical fertiliser
High yield seeds
Modern tractor

(ii) Explain how each of the <u>three</u> 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

Question 7 J2014/P2/Q1/C

(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

<u>OR</u> 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

Question 8 N2013/P2/Q1/C(i)

(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

Question 9 J2012/P2/Q3/C

(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

Question 10 J2011/P2/Q2/C(i)

(c) (i) Explain why crop yields may be low when subsistence farming methods are used. [6]

Uneducated / lack of knowledge of modern methods / use of traditional methods
Animals / draft power
Primitive irrigation system
No mechanisation / tractors
Family / unskilled labour
Poor seed / seeds from last harvest / no HYVs
No fertilisers / pesticides
Dung for manure

Question 11 N2010/P2/Q5/B(i-ii)

(b) (i) Explain *two* of the reasons given in the advertisement for using this tractor on a farm? [2]

(1 mark for each line)

Big and powerful	Replaces several animals, reduces labour force, faster, larger farms
Quick and efficient	Saves time, better cultivation Higher yield, better than manual labour
Many tasks	Only one machine needed, can plough and harvest, reduces labour force

(ii) Why are tractors not used by many small-scale farmers? [4]

Too expensive to buy
High cost of leasing / fuel / maintenance etc.
Farmers are subsistence farmers
Little profit / low yields
Small fields / farms
Lack training / skills / education
Plenty of family / cheap labour / cause family unemployment
Cannot take loans

Question 12 N2009/P2/Q2/D(i)

(d) Study the list of factors which affect agricultural development:

mechanisation	**land consolidation**	**transport improvements**
financial loans	**education**	**telecommunication**	**new seed varieties**

(i) Choose three of these factors and for each explain how it increases production of sugar and other agricultural products. [6]

Mechanisation – faster work, more efficient, better preparation, can thresh and harvest, 'does not need to rest', use of tubewells
Land consolidation – bigger fields, more mechanisation
Transport – faster speed e.g. sugar can to the mill prevents losses, dry ports for inputs e.g. fertiliser, experts (advisers) can visit
Loans – funds to buy inputs e.g. fertiliser, machines, bigger fields, purchase more land, better irrigation
Education – knowledge of better methods,
Seed varieties – higher yields, resistance to pests and disease, less water demand, better germination
Telecommunication – access to information, education, skills

No mark for naming the factor.
Reserve one mark for a simple explanation of each factor (3 needed).
Allow a maximum of 4 for one factor.
This list is not exhaustive, and there may be links between the factors.
Do your best for the candidate, but do not credit excessive repetition.

Question 13 J2009/P2/Q2/C-D

(c) (i) Explain why many farmers use HYV (High Yield Varieties) of seed.
Bigger harvest/heavy crop/double yield/fast growth
Double cropping/multi-cropping
Disease/pest resistance
Drought resistance

Stronger stems
Growing population/increased demand
Government encouragement/incentives
Named variety with crop (e.g. Irripak rice, Maxipak wheat, Nayab 78 cotton) (max 1) [4]

(ii) Study Fig. 2 again. In how many months is the rainfall less than 40 mm?
6 [1]

(iii) Briefly explain *four* methods of providing water in times of low rainfall.
Explanation of:
Canal irrigation
Perennial canal from a dam/headworks
Inundation canal from a river in flood
Distribution/diversion canal from a mountain stream
Tubewell run by electricity
Shaduf, a bucket on a pole, from river or canal
Charsa water drawn from a well by animal power
Persian wheel, a waterwheel turned by animal power
Ponds and tanks to collect rainwater
Karez, a tunnel carrying water from the mountains
Tankers carrying water
Storage in dam, reservoir, barrage
Well for groundwater
Sprinklers [4]

(d) (i) What is alluvial soil?
silt/loam/sediment
deposited by rivers/from flooding
when they flood
contains nutrients/minerals [2]

(ii) Explain why alluvial soil is good for crop growth.
Fertile/contains nutrients (e.g. nitrate/potash/phosphate)
deep
fine texture for drainage/not prone to waterlogging
retains moisture/moisture retentive
replaced each year [3]

Question 14 N2008/P2/Q4/B-C

(b) (i) Explain why the cultivation of rice is labour intensive. Refer in your answer to the work done from planting the seeds to harvest.
Each of these needs a phrase as below
nursery for seeds
repairing bunds for water
prepare fields by plouging/weeding
flooding/irrigation
transplanting seedlings
fertiliser for nutrients/good growth
pesticid to kill pests/for better growth
drain water
cutting/harvesting ripe crop [5]

(ii) Name a type of machine that can be used for rice cultivation instead of human labour.
tractor, harvester, mechanical irrigator (not thresher for cultivation) [1]

(iii) What are the advantages *and* disadvantages of using this machine?
Credit answer in full even if **(ii)** is incorrect.

Advantages (res.1)
quicker
more efficient/less tiring
learn mechanical skills
needs less labour

Disadvantages (res.1)
expensive (max. 1)
can break down
cause unemployment
needs larger fields
causes compaction
needs skilled workers
cannot be used on a small farm [4]

Question 15 N2006/P2/Q1

Study Photograph A (Insert) of a rural area in Hyderabad District.

(a) (i) What is this man doing?
Ploughing / cultivating / tilling **[1]**

(ii) Why is the soil at X a different colour from the soil at Y?
it has been ploughed / turned over
it has not dried out **[1]**

(iii) Name three inputs for farming other than soil that can be seen on the photograph.
bullocks/ cattle/cows/oxen (not buffalo)
plough
(manual) labour **[3]**

(iv) Describe three other processes that may be carried out before the crop is harvested.
A short sentence about
Sowing seeds
Fertilising to provide extra nutrients
Weeding to give plants space to grow
Irrigation / watering to provide water
Spraying pesticide to kill insects / virus / weeds etc. **[3]**

(b) (i) What is subsistence farming?
Producing food for ones self / family (that it not for sale) **[1]**

(ii) Name two other animals other than those on photograph A that may be kept by a small-scale subsistence farmer.
Goats
Sheep
Buffalo
Chickens / poultry
Mules
Donkeys **[2]**

(iii) For each of the two animals you have named in (b)(ii), explain how it is important to the farmer and his family.
This depends on the animal chosen, accept any appropriate product, e.g. Skin for leather, eggs for eating, milk for drinking
Milk
Milk products

Eggs
Meat
Nutrition
Skin / hide
Haulage / carrying
Allow sale of excess product / barter
(res. 1 for each animal, repetition max. 1) **[4]**

(c) (i) Why does the output of a small-scale subsistence farm vary from year to year?
Variable rainfall / monsoon / water supply *(flooding max. 1)*
Pests and diseases
Uses own seed / not HYVa
(any line can be developed to 2) **[4]**

(ii) If a farmer has a good crop and can sell some in the market, how may he use the money (capital) he earns to improve his yield (production) for the next year?
Better seed – HYV, GM, disease/pest resistant
Fertiliser – to provide nutrients
Pesticides – to kill insects, viruses etc.
New animals – younger, better breeding
New tools/implements – better/faster work
Repairs – to machinery, irrigation system, storage etc.
Etc.
(any line can be developed to 2) **[4]**

(iii) Give <u>two</u> ways in which a small-scale subsistence farmer can supplement his income
Carpenter
Blacksmith
Shoe-maker/cobbler
Driver
Etc. **[2]**

Practice Questions 1.2

Question 1 — J2014/P2/Q1/A-B

(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

Question 2 J2012/P2/Q3/B

(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
poor irrigation
} reference to a form of water supply max 2
temperature
pest attack
capital / loans / profit from previous year
family sickness
security / theft
wheat price
reasons for <u>overall</u> increase e.g. HYV, better / more fertiliser, mechanisation, training, population increase

Question 3 J2011/P2/Q2/B

(b) (i) What is meant by a barani crop? [1]

Grown without irrigation
Grown in rainy season

(ii) Name one area of Pakistan where most wheat is grown by the barani method. [1]

Potwar Plateau, Northern Punjab, Piedmont plains
See atlas for a named district in these areas
e.g. Sheikhupera, Sialkot, Gujrat, Jehlum, Rawalpindi, Attock and more

(iii) Study Fig. 2, which shows the months when wheat is grown by the barani method. How much rain fell in the wettest month? [1]

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(iv) Describe the barani method of wheat cultivation with reference to the temperatures and rainfall shown on Fig. 2. [5]

Sown at beginning of winter / Oct–Dec
As rainfall increases (16–41 mms)
When temperatures are mild (4–19 °C)

Grain swells in March–April
With higher rainfall (88–107 mms)

Crop ripens / is harvested in spring / April–May
When temperatures warmer (12–23 °C)

NB Credit any figure within these ranges but must state °C

Question 4 J2010/P2/Q2/B

(b) (i) Describe the methods of cultivation of wheat on barani (rain-fed) lands.
when the rain falls
in winter / October-November
seed sown
harvested when ripe / after 3–6 months / January–March / 90–120 days
ploughing/preparation of soil
fertiliser
pest control / bird scaring / pesticides
weed control / weeding / hoeing
allow collection of rainfall in ponds / tanks
allow levelling of land / terracing / embankments to conserve water [5]

(ii) Explain the advantages and disadvantages to wheat farmers of modern irrigation methods such as perennial canals and tubewells.
Advantages (res. 2)
Fills rainfall gap / water when needed / reduces dependence on rainfall
Can be controlled / steady supply (not in heavy showers)
All year round
Provides more water / irrigates large lands
Increases yield
Double cropping possible
Needed for HYVs
Less labour required
Tubewells can lower the water table / reduce water-logging and salinity

Disadvantages (res. 2)
Cost of installation / expensive
Problems / cost of maintenance / requires fuel or electricity
Shortages / canals may run dry / competition with other users
Lack of technology for pumps/wells
Lack of electricity / power cuts
Causes waterlogging and salinity + explanation (can go to 2 marks) [5]

Question 5 N2005/P2/Q2/C

(c) (i) The wheat is harvested about 6 months after it is sown. In which month is wheat most likely to be sown here?

April/May

(ii) Why is the climate in the months after it is sown good for the growth of wheat?

Mild temperatures 13-23
Warmer for ripening July 23, August 22
High/Moderate rainfall 16-26 mms per month
(Light) rain before harvest/increase in July and August
Dry period for harvesting (only credit if 'May' stated in **(i)**) **[3]**

Question 6 J2005/P2/Q3/A-B

(a) (i) How many million acres of wheat were grown in 2000?
23.5/23 - 24 **[1]**

(ii) For which crop was there a reduction in area from 1990 to 2000?
Vegetables **[1]**

(iii) For which crop was there an increase in area from 1980 to 2000 by 2 million acres?
Cotton **[1]**

(b) (i) Why is an increase in wheat production important?
Increasing population
Alleviate starvation/lack of food
Decreasing imports/step towards self-sufficiency/no loss of foreign exchange
Increasing export (in good years)/increase foreign exchange **[3]**

(ii) State two natural inputs necessary for wheat production, and for each explain its importance.
Cool/moderate temperatures 10 – 20 - for germination and good growth/sowing
Warmer; 25 – 30 for ripening
Dry period - for ripening/harvesting
Moderate rainfall/moist/wet weather - for germination/growing/swelling the grain
Alluvial/loam/clay soil/fertile – for good growth

Well drained soil – for root growth/aeration
Flat land – for machinery and/or irrigation

N.B. only credit 'for good growth' once [2 marks for each input, float of 1] **[5]**

(iii) Explain how human inputs have contributed to the increase in wheat production.
Irrigation on Indus plains and semi-arid areas
Details of irrigation max 2
Fertiliser factories in (named town)
HYVs developed e.g. Maxi Pak, Shahkhan 95, Wadnak 95, Kohson 95
GM modifications
Plant protection programmes e.g. treated seeds, pesticide sprays, locust watch
Land reforms making larger fields/more economical units
Tractors and other modern machinery
Government loans
Support prices
Education/skills/colleges
Capital from investors/banks
Land reform
Named input + explanation required, max 2 each line for development **[6]**

(c) (i) What did the land reform laws aim to do?
Redistribute land more equally/more fairly/ceiling on land holdings
Take land away from large landowners/landlords and give it to the tenants/poor farmers/protect tenants from eviction **[1]**

(ii) What are the advantages of land consolidation?
Economic units
Use of machinery/modern methods
Easier to supervise
Better irrigation
Better opportunity for investment/easier to get loans
Opportunities for research
Bring more land into cultivation **[4]**

Practice Questions 1.3

Question 1 **J2016/P2/Q2/A**

(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 small-scale 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

Question 2 N2015/P2/Q3/A

(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 <u>two</u> 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

Question 3 J2013/P2/Q3/B

(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 <u>(b)(i)</u> 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]

Question 4 J2012/P2/Q3/A

(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

Question 5 J2009/P2/Q2/A-B

(a) There are four main processes of rice cultivation:

harvesting planting preparation of fields growth

List the processes in the correct order.
preparation, planting, growth, harvesting [1]

(b) Study Fig. 2, a bar chart showing monthly rainfall in the Lahore area.
Explain how *each* of the processes named in (a) is linked to rainfall in the Lahore area from June to October.

June	Rain to soften soil for preparation of field/ploughing
June–July	Rain for planting seeds/seedlings
June–September	High/increasing rainfall for flooding fields
June–September	Sufficient rainfall/rain continues for growth
September–October	Drier period for harvest

(Figure with month from graph linked to process max 1) NOT AVERAGES [4]

Question 6 N2008/P2/Q4/A-B(i)

Study Fig. 5, a pie chart showing rice production in Pakistan by province.

(a) (i) Name the provinces A and B where most rice is grown.
Punjab and Sindh [1]

(ii) What percentage of total rice production comes from these two provinces?
88% or 89% OR
46% A and 43% B [1]

(iii) Name a variety that has doubled rice production.
Irripak/IR8 [1]

(b) (i) Explain why the cultivation of rice is labour intensive. Refer in your answer to the work done from planting the seeds to harvest.

Each of these needs a phrase as below
nursery for seeds
repairing bunds for water
prepare fields by plouging/weeding
flooding/irrigation
transplanting seedlings
fertiliser for nutrients/good growth
pesticid to kill pests/for better growth
drain water
cutting/harvesting ripe crop [5]

Question 7 J2006/P2/Q3/C

(c) (i) State two climatic inputs for rice cultivation.

high rainfall/over 1500mms/ more than 1270 mms

temperature 20 – 30 C

warm, dry period for harvesting **[2]**

(ii) How can the yield(production) per hectare of rice be increased?

Ideas such as

Irripak/HYV varieties/ genetic modification to increase output

Modern irrigation / perennial canals to give better water supply/at correct times

Modern fertilisers/pesticides to improve growth/prevent loss

Machines to make work faster

Education to make farmers aware of better methods

Reduction of waterlogging and salinity to increase cultivable area

(Max 2 per line for example or dev.) **[6]**

Practice Questions 1.4

Question 1 N2016/P2/Q4/A

(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

Question 2 N2011/P2/Q2/A-C

(a) Study Fig. 2, which shows cotton growing regions in Pakistan.

(i) Name the regions A and B. **[2]**

A – north /north-east / Upper Sindh
B – south / south-west / Lower Punjab / Upper Indus Plain

(ii) Why is cotton not grown further north? **[2]**

Too cold (in summer / growing period)
Sensitive to frost
Rain / too wet during harvest
Poor soil / infertile etc.
Steep slopes / no flat land
Remote / long way from factories, demand etc.

(iii) Why is cotton not grown further west? **[2]**
Too dry / lack of rainfall (for growth)
Lack of irrigation canals
Too cold (in growing period)
Poor soil / infertile / etc.
Steep slopes / no flat land
Remote

(b) Study Fig.3, a graph of cotton farming.

(i) State the area used to grow cotton in 2005. **[1]**

3.2 / 3,200,000

(ii) State the production in 2005. **[1]**

2.4 / 2,400,000

(iii) By how much has the area used to grow cotton increased from 1975 to 2005? **[1]**

1.2 / 1,200,000 hectares / 2.8–2.9 acres

(iv) Which has increased faster, the area used or the cotton production? **[1]**

(Cotton) production

(c) (i) Explain three factors that have caused the yield of cotton to increase per hectare. **[6]**

An explanation of any three of the following, (max 2 any factor)

fertiliser	for nutrients /fertility + Pakistan soil deficient in nitrogen, better than dung
irrigation	to make up rainfall deficiency + named modern method, all year water
pesticides	as pests reduce growth + example
mechanisation	for efficiency + faster, better quality of work, named machine
education	in modern methods + examples of how things can be improved
HYVs	high yield + pest resistance / double cropping / example
capital	for buying inputs + example
land reform	for more motivation, bigger fields etc.

2 marks for each factor
Name only = 0

(ii) Explain why cotton yields vary from year to year. **[3]**

rainfall / damage to cotton boll before harvest
summer temperatures / early frost
availability of water from irrigation or rain
floods / high winds / storms etc. causing damage
pest attack causing damage
previous income affecting investment so cannot buy good quality inputs
sickness of labour affecting production

Name only = 0

Question 3 N2007/P2/Q2/A-B

(a) Study Fig. 2 which shows the climate of Multan.

(i) Explain why cotton is grown in this area of the Punjab. Refer to Fig. 2 in your answer. **[5]**

Reserve 2 marks for reference to Fig. 2
High summer temperatures/Summer temperatures over 30/May–September 32–31
Temperature rises to 35 in June
Not too cold/No temperatures below freezing/Lowest temperature 7 in Jan + Dec
Some rainfall in April–May for sowing/15-18mms
Rainfall increases in July–August for growth/to 60mm
Little rain/dry on October–November for ripening and harvesting/less than 10mms

Other factors
Alluvial/loam }
Moisture retentive }
Rich in humus } reference to soil max. 2

Lime }
Deep soil }

Flat land
Dry climate to reduce pest attacks
Good irrigation available
Good roads/infrastructure
Access to capital/investment etc.

(NOT consequences e.g. fertiliser factories, population etc.)

(b) (i) Explain how climatic hazards may destroy or reduce the yield of cotton on farms. [4]

Cold temperatures/Frost + can kill plants
Rain + damages cotton boll before picking
Floods + can wash crops away/soil erosion
Thunderstorms/Cyclones – damages to crops/soil erosion
Drought + can reduce growth, kill young plants

(1 mark for named hazard + 1 for explanation)
(max 2 for list)

(ii) Explain *two* other factors that may reduce the production of cotton in Pakistan. [4]

Virus/Pests/disease + e.g. Leaf-curl virus or other named disease
Lack of irrigation water + reduces yield
'Waterlogging and salinity' or other soil damage + reduce yield
Economic/drop in demand/other crops make more money
Pollution + effect
Loss of fertility – not replenished by floods/depleted by crop

(1 mark for named factor + 1 for explanation)
(max 2 for list)

Practice Questions 1.5

Question 1 — N2017/P2/Q3/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

Question 2 — N2013/P2/Q1/C(ii)-D

(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

Question 3 J2013/P2/Q3/C

(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]**

Question 4 N2009/P2/Q2/A-C

Study Photograph A (Insert) showing a crop of sugar cane.

(a) (i) Describe the appearance of this crop. [2]

tall/medium height
not fully grown
thin leaves/long leaves/like grass
dense/close together
good growth because lack of disease/well irrigated

(ii) Explain how the growth of this crop can be improved by [4]

A irrigation (max. 2)

plants need water to photosynthesis/to be healthy/sugar needs a lot of water
makes it grow faster/bigger/higher yield
needed in dry periods/drought/make up deficiency in rainfall
to remove salinity (in the soil)

B fertilisers (max. 2)

provide minerals for growth/reduces crop failure/nutrients
makes up for deficiencies/Pakistan soil deficient in minerals
minerals need replacing after cultivation
examples of minerals e.g. nitrogen, potash (potassium), phosphate
makes it grow faster/bigger/higher yield (but not twice)

(b) Explain how this crop is processed. **[6]**

taken to factory/mill
quickly/without delay
washed/scrubbed
crushed
juice collected
refined
crystallised
whitened/made into white sugar
molasses/brown sugar
baggase produced (a waste product)

Study Fig. 4, a graph of sugar cane production.

(c) (i) What was the increase from 1965 to 2005 in: **[2]**

A production ?

28–29 million tonnes

B yield per hectare?

13–14 tonnes per hectare

(ii) Name an area of high sugar cane production. **[1]**

East-central Punjab/Faisalabad/Sardodha
South-central Sindh/Hyderabad/Badin
Central NWFP/Charsadda

Question 5 J2006/P2/Q3/B

(b) Fig.4 shows the areas where sugar-cane is grown.

(i) Name the areas of high sugar-cane production.

Peshawar district
NW of NWFP
Faisalabad district
Central Punjab
Nawabshah/Nausharo Firoz/Hyderabad/Badin district
Central Sindh/near the river in Sindh **[3]**

(ii) Why are these areas suitable for the cultivation of sugar cane?

Temperature 25 35 C
Irrigation to make up for shortage of rainfall (1520mm)
Loam/clay/silt/alluvial soil (not fertile only)
Fertiliser factories
Good road system **[4]**

(iii) What happens to sugar cane from the time it is fully grown to when sugar juice is extracted?

cut by hand/manual labour

transported by bullock cart/lorry/truck

quickly transported

scrubbed with chalk to remove dirt and smell

crushed to remove juice in heavy rollers **[4]**

(iv) Explain why bagasse is an important by-product of a sugar cane factory.

Fuel

Can be used to generate electricity

Animal feed

Made into chipboard/paper **[2]**

Practice Questions 1.6

Question 1 — N2013/P2/Q1/E

(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

Question 2 — J2013/P2/Q3/A(i)

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]**

Question 3 J2010/P2/Q2/A

(a) Study Fig.3, which shows the areas of cultivation for four main crops in Pakistan.

(i) Which crop covers the greatest area?
Wheat [1]

(ii) What is the area covered by this crop?
8,450–8500 (000 hectares) [1]

(iii) Name *two* other food crops grown in Pakistan not shown on the graph.
Millet / jawar / bajra / sorghum
Pulses / mung / mash / grams / masoor
Oil seed
Named fruit e.g. banana / apple / apricot / date / mango / almond / grape (apply list rule)
Named vegetable e.g. tomato / cabbage / carrot [2]

Question 4 J2006/P2/Q3/A

(a) Study the chart Fig. 3.

(i) Which crop is grown on the largest area?

Wheat **[1]**

(ii) Which crop has the lowest production per acre?

Rice **[1]**

(iii) Why is there such a large production of sugar-cane from a small area?

Large/tall plant
High yield per plant **[2]**

(iv) Name another important cash crop in Pakistan

cotton
tobacco
maize **[1]**

Practice Questions 1.7

Question 1 N2017/P2/Q3/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

Question 2 N2015/P2/Q3/B

(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

Question 3 J2011/P2/Q2/A

(a) MAIZE PULSES MILLET OILSEEDS TOBACCO

(i) Name <u>two</u> crops on the list that are used mainly for animal feed. **[2]**

maize, millet, oil seeds

(ii) Name <u>one</u> crop on the list that is <u>not</u> a food crop. **[1]**

Tobacco

(iii) Name <u>one</u> crop that is rich in protein. **[1]**

Pulses

(iv) Name <u>one</u> type of oil seed. **[1]**

Rape, mustard, groundnut, sesame, sunflower, safflower, soya bean

Question 4 J2007/P2/Q2/A

Study the map of Pakistan, Fig.3.

(a) (i) Name the two main fruit crops grown in area A.
apples, apricots, almonds [2]

(ii) Why are fruit crops grown in mountain valleys?
warmth
shelter
sunshine
rain/less snow
soil
flat land [3]

(iii) Name one of the main fruit crops grown in area B.
Bananas/mangoes/citrus fruit [1]

(iv) Why are fruit crops grown in this area?
Monsoon/summer rainfall
Mild winter temperatures/above 15 C
Irrigation (from the River Indus) [2]

(v) Why are fruit crops grown mainly for local use?
Perishable
Heavy to transport
Small amounts/not of export quality [1]

Practice Questions 1.8

Question 1 N2017/P2/Q3/B

1980

1 @ 1 mark

Changes
Under 5 / (74 to 89) increases
5–20 / (24 to 10) decreases
21 and over / (2 to 1) decreases/halved

2 @ 1 mark

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

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

Question 2 N2016/P2/Q4/B

(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)

Question 3 N2012/P2/Q3/C

(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

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.

Question 4 J2011/P2/Q2/C(ii)

(ii) To what extent can training and land reform be successful in increasing agricultural production? [6]

Training (res. 1)
Better management / efficiency e.g. knowledge of weather, understanding of soils
Better methods of cultivation,
Knowledge of disease
Better seeds / use of HYVs
Proper use of fertilisers and pesticides
Use of machinery / technology
Better money management / can get loans
Better marketing

Land reform (res. 1)
More efficient use of land
Fields for mechanisation,
Less time wasted,
Lower transport costs
More independence / free from control of landlords

BUT (i.e. To what extent) (res. 1)
Reference to:
Illiteracy
Poverty
Power of landlords (Zamidari)
Floods
Etc.

Question 5 N2010/P2/Q5/B(iii)

(iii) In what ways can the government help small-scale farmers to mechanise their farms? [4]

Loans
Leasing / hiring
Subsidies / reduced costs / cheap / goods affordable (not 'free' or 'give')
Training / education
Advertising / leaflets / use of media
Land reform / consolidation so that –
Promote co-operatives

Question 6 J2005/P2/Q3/C

(c) (i) What did the land reform laws aim to do?

Redistribute land more equally/more fairly/ceiling on land holdings
Take land away from large landowners/landlords and give it to the tenants/poor farmers/protect tenants from eviction **[1]**

(ii) What are the advantages of land consolidation?

Economic units
Use of machinery/modern methods
Easier to supervise
Better irrigation
Better opportunity for investment/easier to get loans
Opportunities for research
Bring more land into cultivation **[4]**

Practice Questions 1.9

Question 1 J2014/P2/Q4/E

(e) (i) What is meant by the term 'sustainable agriculture'? [1]

A definition such as
Supplying the food / agricultural product needs of the present generation while protecting / not compromising the food / agricultural product needs of those in the future
Or
Supplying the food / agricultural product needs of the present generation while protecting / not compromising the natural environment
Or
Supplying the food / agricultural product needs of the present generation while minimising environmental damage

(ii) To what extent can agriculture be sustainable in Pakistan? [6]

Possibilities – *Res 2*
Less overcropping / multicropping
Methods of preserving soil e.g. terraces / contour ploughing
Restrict use of heavy machinery
Keeping vegetation cover
Better water management / avoiding over watering / conserving water / lining canals
Organic farming / using manure
Use of appropriate knowledge / training

Problems – *Res 2*
High demand for more food
Pressures on land e.g. for timber
Lack of education / awareness of sustainable methods
Unco-operative landlords
Land reform needed
Lack of government will / support / investment
Resistance to changing traditional / modern methods

Practice Questions 1.10

Question 1 — N2017/P2/Q1/B(ii)

- Increase production of fodder crops;
- Provide more land for grazing;
- Improve feed / better food / healthy food / hygienic food;
- Improve veterinary facilities / number of vets;
- Vaccinations / vitamins / medicines / treatment;
- Provide shelter from elements / weather in winter / living in hygienic conditions;
- Government support / agricultural development funds / loans;
- Education for farmers on animal health/husbandry / disease prevention / selective breeding / cross breeding;
- Investment from multinational companies in poultry / milk processing;
- Introduction of machines, e.g. milking machines.

3 @ 1 mark

Question 2 — J2017/P2/Q1/C

- 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

- 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

Question 3 — N2016/P2/Q2/B

(b) Study Photograph C (Insert).

(i) Name the type of livestock shown in this photograph. **[1]**

Goat *(only)*

(ii) Why is this type of livestock valuable to the farmer? **[3]**

Goatskin / leather products
Meat / food
Dairy products e.g. milk, yoghurt, cheese,
Can survive in rugged areas / sparse grazing / costs little or nothing to feed / do not need much looking after / move goats around easily
Dung as manure / fuel

Source of income
Wool

(iii) What environmental problems can be caused by keeping this type of livestock? [2]

Overgrazing / too many livestock animals in too small an area / livestock not moved to different pastures / land becomes more marginal
Soil erosion / desertification / land becoming barren
Damage to young trees / deforestation

Question 4 N2015/P2/Q3/D

(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]

Levels marked
Level 3 (5–6 marks) Developed points explaining both views (possible and not possible). Evaluation giving clear support to one view, with developed points explaining importance (5), and with at least one reference to an appropriate example (6)
Level 2 (3–4 marks) Developed point explaining one view or explaining importance (3), developed points explaining both views (or either view) **or** explaining one view and explaining importance **or** explaining importance only (4). No evaluation.
Level 1 (1–2 marks) Simple point addressing one view or explaining importance (1), simple points addressing both views **or** one view and explaining importance **or** explaining importance only (2).

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

Question 5 N2014/P2/Q3/C

(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

Question 6 J2012/P2/Q2/D

(d) (i) What is the meaning of the livestock farming terms [2]

A Transhumance?

Seasonal movement to higher pastures in mountains in summer and return in winter

B Nomadic farming?

(Seasonal) movement in search of pasture / water / food

(ii) What are the advantages and disadvantages of these types of livestock farming in either mountain or desert areas? [6]

Allow max 4 marks for general adv. and disadv of livestock farming in both areas

But reserve 1 adv. and 1 disadv for specific reference to **either** mountain **or** desert areas.

Advantages (res. 2)
Access to good pasture
Low cost / free
In areas of poor soil / land
Source of income e.g. goods to sell (max 2)
Source of food
Dung for fertile soil
Camels adapted to desert
Sheep and goats eat poor quality grass

Disadvantages (res. 2)
Need to move about / no permanent home
Poor quality animals / difficult to be commercial / cannot keep buffalo
Lack of water in desert
Lack of vets in both areas
Relies on uncertain desert climate
Overgrazing ONLY in desert / nomadic farming

Question 7 N2011/P2/Q4/A

(a) Study Photograph B (Insert).

(i) What are the animals shown in the photograph? [1]

Sheep / goats (list rule)

(ii) Describe the topography (relief) and vegetation of the area shown in the photograph. [3]

Topography (res. 1)
Flat
Gently sloping, undulating
Small ridges

Vegetation (res. 1)
Sparse
Scattered / uneven
(Small) bushes, scrub, trees, thorny (any 2)

(iii) Explain why these animals are reared in a nomadic way in arid areas. [3]

Search for / lack of food / pasture
Quickly finished so have to move
Search for / lack of water
Move with the weather
No infrastructure for settlement

(iv) What are the disadvantages of keeping animals in a nomadic way? [2]

Overgrazing / soil erosion / desertification
Low incomes
Animals may die / starve / poor quality animals
Difficult to improve / develop
Lack of veterinary care / disease spreads easily
Poor breeding

(v) Suggest an alternative way of keeping these animals. [1]

In stalls / stall feeding
In fields / fenced areas
Transhumance

Question 8 N2010/P2/Q2

(a) Study Fig. 4 (Insert) which shows patterns of goat rearing in Pakistan.

(i) Describe the distribution of goat rearing in Balochistan. [3]

Widespread / low and moderate in most areas
Main area in SE / E / Sindh border / Kalat / Khuzdar / Central Brahui Range / Kirthar Range / Indus Plain (allow up to 2 named areas)
Main area in North / NW / NWFP border / Zhob
Low in West / Western borders / Chagai Hills / Ras Koh / Kharan desert
No information for coastal and some other areas

(ii) Suggest why the government of Pakistan discourages the rearing of goats. **[2]**

Overgrazing
Loss of vegetation / deforestation
Soil erosion / soil loose

(iii) Why are there many nomadic farmers in Balochistan? **[3]**

Shortage of / to search for grazing / food
Shortage of / to search for water
Agriculture / cultivation /crop growth difficult or impossible
Low population (so plenty of land)

(b) Explain why buffalo are not reared in Balochistan. **[3]**

Lack of water to drink
Lack of water to wash / lie in / bath in / keep cool
Lack of water / buffalo need water (1)
Lack of fodder crops / poor grazing
Lack of demand / few urban areas

(c) Study Photographs A and B (Insert) showing a buffalo farm in Lodhran district, Punjab.

(i) How do the photographs show that these buffalo are being kept in good living conditions? **[6]**

Photo A
Covered shelters / shade / roof / shed etc.
Brick / concrete / will not collapse
Fodder / food
Feeding trough
Brick standing by troughs
Clean conditions / dung cleared away

Photo B
Water for bathing / washing / cooling /drinking
Concrete pool
Clean water / water from well
Organised storage of fodder / dung

(ii) Suggest why buffalo farms can often be found around urban areas. **[2]**

Food (for urban population) / demand for milk or meat
Must be fresh / deteriorates quickly
Can make deliveries / supplied on a regular basis
Products for processing, e.g. milk, ghee, butter

(d) Meat provides a valuable source of protein in food, and there are many other useful products from animals.

Explain the advantages and disadvantages of developing livestock farming in Pakistan. **[6]**

Advantages (res. 2)
More food / healthy food / great demand – with e.g.

Other products – with example (hides, horn)
Exports (with example)
Employment / earnings
Manure / dung / gobar / for burning
Processing industries (with example)
Sustainable e.g. animals reproduce, traditional skills

Disadvantages (res. 2)
Loss of land / water for food crops.
Overgrazing problems.
Less investment in other forms of farming.
Low income / low profit.
Disposal of waste / problems of cleanliness / pollution (with example)
Cost of setting up / fodder / vets bills etc (max 2)
Disease transfer to humans
Some products not of export quality / banned by western countries
Not sustainable e.g. (may refer to above)

Question 9 J2008/P2/Q1/C-D

(c) (i) What work is done on the farm by these animals, other than that shown on the photograph?

Hoeing – to remove weeds, thin seedlings
Harvesting – cutting the crop
Milling/grinding/threshing – to remove husks, for flour, by animal walking round
Transport – of seeds, fertiliser, crop, to field, to market,
Drawing water – from wells, by shaduf, charsa, by walking round
Threshing – separating the husk from the seed [3]

(ii) What do these animals and other livestock on the farm produce that they can use or sell?

Dairy products/milk/butter/ghee etc.
Meat
Hides/skin
Young stock
Eggs
Dung
Hooves
Horns
Bones [3]

(d) How can livestock farming be improved in Pakistan?

Capital/investment/loans/subsidies for – named purpose
Selective/cross breeding, breeding on scientific lines – for better animals etc.
Better feed/fodder – for stronger, bigger, animals etc.
More grazing land – by irrigation, drainage, fertiliser etc.
Control of disease – e.g.
- Research – disease, breeding, feed etc.
- Vaccination – to improve health
- More medicines/more vets to treat animals
- Education/training in named modern methods
- Better hygiene/care/living conditions etc.
- Mechanisation e.g. milking machines for hygiene, speed [5]

Question 10 J2007/P2/Q2/C

(c) (i) Name two animals that are reared by nomads in area C.

goats
sheep
cattle
camels [2]

(ii) Explain the importance of their livestock to the nomads.

Food – milk, meat, butter etc.
Clothing – wool, hides etc.
Income/for selling/bartering – Young animals/named product
Transport
Tents/shelter
Wealth [2]

(iii) Describe the nomadic method of farming.

Moving/settle for a few weeks
In search of water
In search of pasture/food
Subsistence farming [3]

Question 11 N2005/P2/Q2/A

(a) Study Photograph A. A valley in the Hindu Kush.

(i) Name this type of animal

Cow(s)/cattle **[1]**

(ii) Suggest why these animals were taken here

Food/pasture/grazing/
water/drinking **[2]**

(iii) What type of farming is this?

Livestock/pastoral/transhumance/nomadic/semi-nomadic **[1]**

(iv) Give two outputs of this farming system that can increase the income of the farmer.

Hides
Meat
Milk
Butter
Bones **[2]**

Review Exercise

Question 1 — N2017/P2/Q3/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:

Possible
- 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.

Not possible
- 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.

Question 2 — J2017/P2/Q1/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.

Question 3 N2016/P2/Q4/D

(d) Read the following two views:

A

Pakistan should plant more cash crops on its land to generate export earnings.

B

More land should be used to grow crops to feed the growing population of Pakistan.

Which view do you agree with more? Give reasons to support your answer and refer to examples you have studied. [6]

L3	5–6 marks	6 – ***Developed points explaining both views. Evaluation gives clear support to one view. At least one reference to an appropriate example*** 5 – ***Developed points explaining both views. Evaluation gives clear support to one view***
L2	3–4 marks	4 – ***Developed point(s) explaining both views. No evaluation*** 3 – ***Developed point(s) explaining one view***
L1	1–2 marks	2 – ***Simple point(s) addressing both views*** 1 – ***Simple point(s) addressing one view*** 0 – ***No valid response***

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

Question 4 N2012/P2/Q3/B

(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]**

Question 5 J2010/P2/Q2/C-D

(c) Waste products from food crops such as straw from cereals and bagasse from sugar cane have some uses. Explain the importance of waste products such as these. You may refer to those crops shown in Fig. 3 or others.

bagasse for paper / cardboard / packaging
bagasse for chipboard,
molasses / bagasse for chemical industry
straw for bedding / roofing / strawboard
animal food
composted
mixed into soil / ploughed in
bagasse for power stations / fuel

The candidate may refer to 'importance' if so accept
Can save fossil fuels / coal / gas / oil
Cheaper than fossil fuels etc. / electricity
Etc. [3]

(d) Read the extract below.

The farming land in barani areas such as the Potwar Plateau is subjected to soil erosion, overgrazing, and desertification due to poor farm management. This leads to low crop productivity, poor quality livestock and low farm incomes.

(i) What reasons does the writer give for the low farm incomes in barani areas?
soil erosion, over grazing, desertification [3]

(ii) Explain these, and other causes of low farm incomes.
Explanation of those reasons stated in **(i)**. This may include those given in the last sentence of the extract.
E.g. Soil erosion means poor root growth and small crop output
Overgrazing means lack of food for animals and soil erosion / desertification
Desertification causes climatic change and a lack of water
Low crop productivity means low incomes leading to less money for better seed, fertiliser etc.
Poor quality livestock produces less milk, meat etc.
Little money to spend on better seed, fertiliser etc. because of low farm incomes

Also candidates may be given marks for explaining
Traditional farming methods give low yields
Small farms so little mechanisation
Oppressive landlords (Zamindari) so high rents, no chance of improvement
Poor climate so difficult to grow good crops
Storms and flooding / pest attacks (e.g. locusts, weevils) destroy crops
Illiteracy / lack of education so no improvements
Rural – urban migration so able-bodied men leave
Waterlogging and salinity reduces cultivable area / yield
Lack of government support / investment [5]

Recent Past Paper Questions

Question 1 J2018/P2/Q3

- The rearing / taking care / feeding / keeping of animals.

1 @ 1 mark

- 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

- Fig 3.1 – Cows / cattle;
- Fig 3.2 – Sheep / lambs.

2 @ 1 mark

- Milk / cream / cheese / yoghurt / ghee;
- Meat / beef;
- Skin / leather.

2 @ 1 mark

- 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

- 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

- 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

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

Levels marking

No valid response	0
Level 1 Simple point addressing any challenge or strategy (1) Simple points addressing any challenge or strategy (2)	1–2
Level 2 Developed point(s) explaining one challenge or strategy (3) Developed point(s) explaining any challenge and strategy (4) No evaluation	3–4
Level 3 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)	5–6

Content Guide
Answers are likely to refer to:

Challenges
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.

Strategies
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.

Question 2 N2018/P2/Q1

Fig. 1.1 = Rice
Fig. 1.2 = Sugar cane
Fig. 1.3 = Cotton
Fig. 1.4 = Wheat

4 @ 1 mark

- 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

- 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

- 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

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

- 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

Levels marking

No valid response	0
Level 1 Simple point addressing any view (1) Simple points addressing any view (2)	1–2
Level 2 Developed point(s) explaining one view (3) Developed point(s) explaining both views (4) No evaluation	3–4
Level 3 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)	5–6

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;

- 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.