
PAKISTAN STUDIES

2059/02

Paper 2 The Environment of Pakistan

For Examination from 2015

SPECIMEN MARK SCHEME

1 hour 30 minutes

MAXIMUM MARK: 75

This document consists of **16** printed pages.

- 1 (a) (i) State one way in which arable farming is different from pastoral farming.

Need to state a comparison, e.g.

Arable involves growing crops but pastoral is keeping animals/livestock.

[1]

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

Tobacco

[1]

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

Two from: maize, millet, oil seeds.

(1 + 1) [2]

- (b) (i) What is meant by the *barani* method of growing crops?

Examples

Crops grown without any irrigation (1)

Crops grown in the rainy season (1)

[1]

- (ii) Complete the climate graph (Fig. 1).

Correct plot and linked to existing line at 20 °C (1)

Correct plot and shading at 45 mm (1)

(1 + 1) [2]

- (iii) Describe the distribution of rainfall during the period of wheat cultivation. Refer to data and months in your answer.

Need to recognise three stages; allow some tolerance on mm.

Examples

Wheat cultivation begins in December when rainfall is 41 mm (1)

Wheat growth continues as rainfall rises to a maximum of 107 mm in March (1)

Wheat cultivation ends in May as rainfall falls to 45 mm (1).

(1 + 1 + 1) [3]

- (iv) Explain how the *barani* method of wheat cultivation relates to the temperatures and rainfall shown on the graph (Fig. 1).

Reserve 1 mark for temperature and 1 mark for rainfall. Allow tolerance on data.

Examples

Temperature

Sow at beginning of winter/December when temperatures low/mild/average 5 °C (1)

Growth/grain swells as temperatures increase to 14 °C in April (1)

Crop ripens/harvested as temperatures increase to 23 °C in June (1)

Rainfall

Sow at beginning of winter/December when rainfall increases to 41 mm (1)

Growth/grain swells as rainfall increases to 107 mm in April (1)

Rain falls after March and crop ripens ready for harvesting when rain below 45 mm (1)

(3 + 1) or (2 + 2) [4]

- (c) (i) State one difference between subsistence farming and commercial farming.

Examples

Subsistence is growing food for own use / survival / commercial aims for a surplus (1)

Subsistence often small-scale / commercial large-scale (1)

Subsistence involves labour / family commercial more machinery (1)

Subsistence no profit motive / commercial aims for profit (1) [1]

- (ii) Give two reasons why crop yields may be low when subsistence farming methods are used.

Examples

Lack of knowledge of modern methods (1) so traditional/slow methods used / low yields (1)

Have to use animals/draft power (1) so slower as lack machinery/capital/tractors (1)

Old/primitive/unreliable irrigation systems used (1) so lack of water required for growth (1)

Use of untrained family / unskilled labour (1) so poor/ill-informed decisions made (1)

Use poor seeds/from previous harvest (1) so poor quality growth likely (1)

No access to HYVs (1) so cannot get highest possible yields (1)

Can't afford / lack access to pesticides/fertilizers (1) so pests eat crops / growth

minimal (1) $2 \times (1 + 1)$ [4]

- (d) Which statement do you agree with more? Give reasons for your answer and refer to places or examples you have studied in Pakistan to support your answer.

No marks awarded for statement supported; marks are for the argument candidates make.

Level	Description	Marks
Level 3	Two more elaborate statements that refer to both statements (A and B) in positive and/or negative ways while supporting one statement, and also includes some place-specific information or examples that relate to Pakistan.	[5–6]
Level 2	One or two more elaborate statements that refer to both statements (A and B) in positive and/or negative ways while supporting one statement, e.g. a more elaborate statement supporting statement A, <i>Although farmers do need more help I support Statement A more. By building an agricultural college we will produce young educated farmers as we must invest in the future.</i>	[3–4]
Level 1	One or two simple statements that show limited positive and/or negative reasons for choosing one statement (A or B) only, e.g. a simple statement supporting statement A, <i>An agricultural college will produce lots of educated farmers.</i>	[1–2]
Level 0	No valid response.	[0]

Indicative content

Supporting Statement A

Increased knowledge/management and more educated farmers in future
 Long-term improvement vital; otherwise status quo continues
 Better methods of cultivation used
 Better use of fertilizers/pesticides/disease management
 More knowledge of using/repairing machinery

Supporting Statement B

More immediate effect to solve current shortages
 More crops/livestock can be produced more quickly
 Poor farmers can move beyond subsistence to a surplus/profit
 May increase employment
 Increased demand for machinery/tools and employment

- 2 (a) (i) **Making cement is an important industry in Pakistan. Circle below which industrial type the cement industry belongs to.**

Secondary [1]

- (ii) **Which statement below shows the two main raw materials extracted in Pakistan to make cement? Tick your answer.**

Gypsum and limestone [1]

- (iii) **Name two other inputs that are used in a cement factory.**

Examples

Labour (1)

Land / area (1)

Buildings (1)

Machinery (1)

Money / capital / investment (1)

Power / electricity / gas / coal / oil (1)

Water (1)

(1 + 1) [2]

- (b) (i) **Suggest why there are no cement factories in Balochistan.**

Examples

Maybe no gypsum / limestone (1)

Mining difficulties due to mountains (1)

Low rainfall / drought makes working difficult (1)

Lack of water (1)

Transport problems (1)

Low population density / lack workforce (1)

[1]

- (ii) **Describe the distribution of cement factories in Pakistan.**

Examples

Mostly north-east / Punjab area (1)

One in central area (1)

Cluster / six in south-east (1)

Group / three close to / on coast / in Sindh (1)

Almost all in Punjab / Sindh / in east of Pakistan (1)

(1 + 1) [2]

- (iii) **Cement is mostly used for building in Pakistan. However, many manufactured products are exported. What is an 'Export Processing Zone' (EPZ)?**

Examples

A special industrial zone (1)

An industrial estate (1)

Supports manufacture of products for export only (1)

Companies get government grants (1) e.g. for electricity/water supply/roads/telephones (1)

Companies get tax exemptions (1)

Companies can develop housing / social facilities within EPZ (1)

Allow one mark if they name Karachi, Sialkot, Rawalpindi or Risalpur (1) (1 + 1 + 1) [3]

- (iv) Explain how these Zones can increase the 'Gross National Product' (GNP) of Pakistan.

Examples

- Attract manufacturing companies (1)
 More products to sell abroad/ increase exports (1)
 Earn more foreign exchange (1)
 More profit due to grants, lower taxes, incentives (1)
 Other linked services move in and increase income (1) (1 + 1 + 1 + 1) [4]

- (c) (i) Look at Photograph A on the Insert. It shows a cement factory near Ghulamullah, in Thatta district. Apart from building the factory, suggest one other way in which human activity has changed the landscape here.

Examples

- Cleared of trees/vegetation/deforestation (1)
 Creation of kacha/wide road (1)
 Tyre tracks indicate presence of transport (1) [1]

- (ii) Explain two ways in which this factory may be damaging the local environment.

Examples

- Transport to/from factory (1) may be creating air pollution (1)
 Smoke from chimney (1) causing air pollution (1)
 Factory buildings (1) create visual ugliness / pollution (1)
 Waste from factory (1) may cause water pollution (1)
 Smoke from factory (1) may damage vegetation in local area (1)
 Transport may be creating ruts in landscape (1) compacting surface / soil erosion (1)
 2 × (1 + 1) [4]

- (d) Which statement do you agree with more? Give reasons for your answer and refer to places or examples you have studied in Pakistan to support your answer.

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Level	Description	Marks
Level 3	Two more elaborate statements that refer to both statements (A and B) in a positive and/or negative way while supporting one statement, and also includes some place-specific information or examples that relate to Pakistan.	[5–6]
Level 2	One or two more elaborate statements that refer to both statements (A and B) in positive and/or negative ways while supporting one statement, e.g. a more elaborate statement supporting statement A, <i>Although it is important to increase food supplies, I support Statement A more. Major cities have a large workforce so they can be paid low wages.</i>	[3–4]
Level 1	One or two simple statements that show limited positive and/or negative reasons for choosing one statement (A or B) only, e.g. a simple statement supporting statement A, <i>I support statement A more because there are customers nearby.</i>	[1–2]
Level 0	No valid response.	[0]

Indicative content

Supporting Statement A

Increased improvement to economy
 Long-term improvement vital; otherwise status quo continues
 Local workforce available close by
 Much of infrastructure already in place
 Customers close by
 Transport costs to customers can be low
 Major cities may have international links for exports

Supporting Statement B

High growth of population
 Food shortages must be resolved / more humane investment
 Health is vital to development
 Increased life expectancy needed
 Healthier workforce will increase productivity
 Long-term interest to increase food production
 Reduce imports of food and improve balance of payments

- 3 (a) (i) State the percentage of literate people living in urban areas.

62/63% [1]

- (ii) How much greater is this than the percentage of literate people living in rural areas?

24–26% [1]

- (iii) Give **two** reasons why the percentage of literate people living in urban areas is greater than the percentage living in rural areas.

Examples

There are schools / better schools (1)

Jobs in towns attract literate people (1)

Presence of HE/FE/colleges/universities (1)

Traditional farming has less/little need for literacy (1)

More literate women likely to be in urban areas (1)

Higher income in urban areas / can afford to be educated (1) (1 + 1) [2]

- (b) (i) Complete the table by calculating the natural increase of population for 2009.

22.9 [1]

- (ii) Population totals can also be affected by migration. PUSH and PULL factors cause people to migrate from rural areas to urban areas. Below are four of these factors. Circle whether you think each is a PUSH or PULL factor.

Work in a factory PULL

Drought killing crops PUSH

Safety from civil war PUSH

Children can go to school PULL

(Mark as one correct = 0, two or three correct = 1 mark, four correct = 2 marks) [2]

- (iii) Suggest **three** problems that migrants from rural areas to urban areas might face when they arrive at the town or city they have moved to.

Examples

Lack of housing (1)

Can't afford a house (1)

Lack of work / unemployment (1)

Have to live in cramped/crowded/illegal conditions (1)

Issues of race/caste/tribal differences/culture clashes (1)

Exploitation / low pay / long working hours (1)

Health issues / examples e.g. cholera (1)

Language differences (1)

Lack of education/qualifications (1) (1 + 1 + 1) [3]

- (iv) **Why do people in villages think that their quality of life will improve if they move to a town or city?**

Examples

Access to better housing (1)
 More chance of employment (1)
 Better wages (1)
 Regular work/wages (1)
 Better working conditions/hours than farming (1)
 Access to services/electricity/gas/water/internet/phones (1)
 Access to infrastructure/banks/transport/shops (1)
 Better/more reliable food sources (1)
 Bright lights syndrome / media perception (1)
 Access to entertainment/clubs/parks (1)
 Safety/security/police (1)

(1 + 1 + 1 + 1) [4]

- (c) (i) **Study Photograph B on the Insert. Describe the housing shown at the front of the photograph.**

Examples

Irregular pattern (1)
 Crowded together (1)
 Single-storey (1)
 Corrugated iron roofs (1)
 Lack gardens / land around them (1)
 Lack windows (1)
 Squatter settlements / shanty areas (1)

[1]

- (ii) **With reference to Photograph B and your own knowledge, give two reasons why many people become ill in areas such as the one shown here.**

Examples

Crowded homes (1) cause disease to spread (1)
 Cramped conditions / noise from factories (1) creates stress (1)
 Water pool/pond (1) encourages mosquitoes/malaria (1)
 Stagnant water (1) helps create cholera/bilharzia (1)
 Lack of clean water/polluted water (1) causes illness/stomach problems (1)
 Dust/air pollution from nearby factory (1) causes asthma/breathing issues (1)
 Flimsy buildings / leaky roofs (1) creates risk of damp/cold conditions (1)
 No access to doctors/hospitals (1) so not likely to be treated quickly / germs spread (1)

2 × (1 + 1) [4]

- (d) Which statement do you agree with more? Give reasons for your answer and refer to places or examples you have studied in Pakistan to support your answer.

No marks awarded for statement supported; marks are for the argument candidates make.

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Level 3	Two more elaborate statements that refer to both statements (A and B) in a positive and/or negative way while supporting one statement, and also includes some place-specific information or examples that relate to Pakistan.	[5–6]
Level 2	One or two more elaborate statements that refer to both statements (A and B) in positive and/or negative ways while supporting one statement, e.g. a more elaborate statement supporting statement A, <i>Although it is important that the shanty towns are improved to a high standard by using some good companies, I support Statement A more. Shanty towns have a large workforce who could provide their labour free so saving the government the full cost.</i>	[3–4]
Level 1	Two simple statements that show limited positive and/or negative reasons for choosing one statement (A or B) only, e.g. a simple statement supporting statement A, <i>I support statement A more because there are workers nearby.</i>	[1–2]
Level 0	No valid response.	[0]

Indicative content

Supporting Statement A

Local workforce available close by
 Can train/develop local skills for future
 Gives responsibility to local people
 Allows local people to provide inputs
 Cheaper if labour is free
 Only need to provide training/materials
 Quick to implement

Supporting Statement B

Government has power to get things done
 Easy to fund/get resources from government
 Can employ companies that will complete job professionally
 Can improve large areas without local issues of dissent
 Can gain economies of scale in providing raw materials
 Easy to create linked services e.g. electricity, water
 People don't need skills training

- 4 (a) (i) Plot the following information on the graph, Fig. 6.

Wheat plot at 24 000 with shading. [1]

- (ii) Which crop had the lowest production in 2009?

Rice [1]

- (iii) Sugar cane is a very productive crop. Suggest two reasons high production is possible from quite a small area.

Examples

Large/tall plant (1) OR Narrow plant / less space taken (1)

High yield per plant / huge amount in each crop (1) (1 + 1) [2]

- (b) (i) What is meant by the term 'fertiliser'?

(Do not credit names of fertilisers)

Example

A chemical addition to the land to make the soil more fertile. [1]

- (ii) Study Fig. 7. Complete the passage below by circling the correct answers.

NPK, Potassium, Phosphorus, Nitrogen

(Mark as one correct = 0, two or three correct = 1 mark, four correct = 2 marks) [2]

- (iii) Fertilisers are used by farmers on their fields. Suggest three problems that using fertilisers could cause for the environment and people of Pakistan.

Examples

Can upset ecosystems (1)

May damage natural food webs/chains (1)

Loss of/damage to species/plants/animals (1)

Chemicals washed out into water (1)

Eutrophication / loss of oxygen in water (1)

Fish die / algae growth limits light into water (1)

Polluted water / chemicals get into water cycle (1)

Illnesses to people (1)

Over-reliance on fertilisers / shortage problem (1) (1 + 1 + 1) [3]

- (iv) What are the benefits of increasing fertiliser production for the people and the economy of Pakistan?

Examples

Employment in producing more fertiliser (1)

More food production (1)

Less starvation / food shortages (1)

Less food imports / more food exports (1)

Better balance of payments / higher GNP (1)

Less debt / more farm profits (1)

Food surplus / less subsistence (1) (1 + 1 + 1 + 1) [4]

(c) (i) Complete Fig. 8, the pie chart using the figures below and the key provided.

1 mark for plotting the correct line at 65% and for correct use of key provided. [1]

(ii) Much of the imported machinery is used in the craft industry. Explain the importance of mechanisation to the craft industry and other small-scale industries in Pakistan.

Examples

Quicker than manual effort (1) so can increase production (1)

Less labour needed (1) so lower labour costs (1)

Same quality of product (1) so consistent standard maintained (1)

Can replace/reduce child labour (1) so more humane attitude to workforce/less exploitation (1)

Learn new skills (1) so can develop the workforce/use more complex machinery (1)

2 × (1 + 1) [4]

- (d) Which statement do you agree with more? Give reasons for your answer and refer to places or examples you have studied in Pakistan to support your answer.

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Level 2	One or two more elaborate statements that refer to both statements (A and B) in positive and/or negative ways while supporting one statement, e.g. a more elaborate statement supporting statement A, <i>Although it is important to produce as many of Pakistan's own goods as possible, I support Statement A more. The EU can trade its technology and save Pakistan a lot of time in trying to develop its economy.</i>	[3–4]
Level 1	One or two simple statements that show limited positive and/or negative reasons for choosing one statement (A or B) only, e.g. a simple statement supporting statement A, <i>I support statement A more because Pakistan can get new products/technology more quickly.</i>	[1–2]
Level 0	No valid response.	[0]

Indicative content

Supporting Statement A

Better/peaceful relationships with EU countries/West
 More rapid access to latest technology/products
 Not get left behind in development
 Increase exports / better balance of payments / increase GNP
 Can focus on what produce best
 Influence on EU policies e.g. immigration

Supporting Statement B

Need to avoid reliance/dependence on Western powers
 Poor relations could lead to trade issues/ban
 Need to develop skills/resources of people
 Need to increase GDP
 Producing own goods reduces imports
 Cheaper goods than importing if home-made

- 5 (a) (i) **Estimate the average (mean) January temperature at Faisalabad.**

Any number from 10–15°C inclusive; accept 12.5°C or similar to 1DP max. [1]

- (ii) **The January temperature at Karachi is 19°C. Shade the area that includes Karachi using the key.**

One mark for shading coastal strip including Karachi in darkest colour. [1]

- (iii) **Describe the distribution of January temperatures in Pakistan.**

Examples

Temperatures increase from north/NE to south/SW (1) from 0°C near Chitral to over 18°C around Karachi / at the southern coast (1)

Temperatures increase from west/NW to east/SE (1) from 0°C in north Balochistan to 18°C in east Sindh (1) (1 + 1) [2]

- (b) (i) **What is meant by ‘monsoon’ rainfall?**

Examples

Heavy rainfall that falls for a few months/summer months during the year (1)

Heavy rainfall caused by a reversal of winds as pressure systems change (1) [1]

- (ii) **Name the body of water that is the source of moisture for each of the monsoon winds X and Y.**

X – Bay of Bengal (1)

Y – Arabian Sea (1) (1 + 1) [2]

- (iii) **Describe the distribution of the two areas that receive over 125 millimetres of monsoon rainfall between July and September.**

Examples

Southern Sindh (1)

Area SE of Pakistan / by SE coast (1)

North/NE Pakistan (1)

Southern area has over 125 mm but not 250 mm (1)

North Punjab/NWFP/FATA/part of SWAT (1)

Increases from 125 mm Punjab to NE where reaches 500 mm (1) (1 + 1 + 1) [3]

- (iv) **What problems are created for farmers in areas of high temperature and low monsoon rainfall such as in Northern Sindh and Southern Punjab?**

Reserve one mark for reference to high temperature and one mark for reference to lack of rainfall.

Examples

Temperature

High evaporation/evapotranspiration (1)
 Dry soils (1)
 Difficult working conditions (1)

Rainfall

No other sources of rainfall (1)
 Lack relief to cause relief rainfall (1)
 Low humidity (1)
 Need for irrigation (1)
 Can't afford to irrigate / tubewells (1)
 Irrigation water already provided elsewhere (1)

Other

Poor crop growth (1)
 Shortage of food for subsistence (1)
 Low profit/income (1)

(1 + 1 + 1 + 1) [4]

- (c) (i) **Irrigation is required in many parts of Pakistan. Which statement below best describes 'irrigation'? Tick your answer.**

Adding water to the land to enable farming to take place [1]

- (ii) **Name one irrigation technique that is used in Pakistan. Describe how this technique works. You may use a labelled sketch or diagram.**

One mark for named choice. Three marks for how the technique is described and explained. Can all be from labels on sketch or mixture of labels/text.

Likely choices: canals, diversion canals, lift irrigation, sailaba, wells, tubewells, karez.

(1 + 3) [4]

- (d) Which statement do you agree with more? Give reasons for your answer and refer to places or examples you have studied in Pakistan to support your answer.

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Level 2	One or two more elaborate statements that refer to both statements (A and B) in positive and/or negative ways while supporting one statement, e.g. a more elaborate statement supporting statement A, <i>Although it is important to involve local people who know the problems they face with water supply, I support Statement A more. The government has the money and knowledge to plan for the whole country so rainfall and water supplies are not wasted.</i>	[3–4]
Level 1	One or two simple statements that show limited positive and/or negative reasons for choosing one statement (A or B) only, e.g. a simple statement supporting statement A, <i>I support statement A the most because large dams in wet areas can supply dry areas a long way away.</i>	[1–2]
Level 0	No valid response.	[0]

Indicative content

Supporting Statement A

Rainfall can be stored in one area and supply a dry area
 Government has power to get things done
 Expensive to fund/get resources from government
 Can employ companies that will complete job professionally
 Can plan at national scale
 Can gain economies of scale in providing raw materials
 No cost to local people

Supporting Statement B

Local workforce could build small-scale systems with training
 Can train/develop local skills for future
 Gives responsibility to local people
 Allows local people to provide inputs
 Cheaper if labour is free
 Can respond to local conditions
 Quick to implement