CAMBRIDGE
International Education

Cambridge O Level

PAKISTAN STUDIES **2059/02**

Paper 2 The Environment of Pakistan **For examination from 2028**

MARK SCHEME

Maximum Mark: 75

Specimen

This document has **20** pages.

Generic Marking Principles

All examiners must apply these general marking principles when marking candidate responses. Examiners must apply them alongside the specific content of the mark scheme or generic level descriptions for a question. Each question paper and mark scheme must also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptions for the question
- the specific skills defined in the mark scheme or in the generic level descriptions for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptions.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however, the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptions in mind.

Assessment Objectives

AO1
Candidates should be able to:
- recall, select, use and communicate knowledge of the syllabus content.

AO3
Candidates should be able to:
- apply knowledge of the environment of Pakistan to show understanding of, explain, interpret, analyse and evaluate:
  - key terms, factors, models, processes, changes, inter-relationships and issues affecting Pakistan's natural and human environments
  - strategies and approaches used to manage Pakistan's natural and human environments
- use a variety of resources to describe, analyse, interpret and extract relevant information
- make a reasoned and supported decision or judgement where required.

Guidance on using levels-based mark schemes

Marking of work should be positive, rewarding achievement where possible, but clearly differentiating across the whole range of marks, where appropriate.

The marker should look at the work and then make a judgement about which level statement is the best fit. In practice, work does not always match one level statement precisely so a judgement may need to be made between two or more level statements.

Once a best-fit level statement has been identified, use the description within each level to decide on a specific mark.

Table A: Use this table to give marks for each candidate response for AO1 and AO3 for the **part (d)** questions in Section A.

Level	Description	Marks
Level 3	• Developed reason(s) showing a range of detailed and relevant knowledge and understanding, including discussion of an alternative viewpoint. • Use of relevant and detailed example(s) to support the answer. • A supported judgement is reached.	7–8
Level 2	• Developed reason(s) showing a range of relevant knowledge and understanding, including limited discussion of an alternative viewpoint. • Use of at least one relevant example to support the answer. • A supported judgement is reached.	4–6
Level 1	• Simple reason(s) showing basic knowledge and understanding. • Use of example(s) is limited. • A judgement is attempted.	1–3
Level 0	No creditable response.	0

Table B: Use this table to give marks for each candidate response for AO1 and AO3 for the **part (d)** in Section B.

Level	Description	Marks
Level 3	• Developed reasons showing a range of relevant and detailed knowledge and understanding to support the answer. • Use of a range of relevant, accurate and detailed supporting evidence from the Figures to support the answer. • A justified decision is reached.	7–8
Level 2	• Developed reason(s) showing a range of relevant knowledge and understanding to support the answer. • Use of at least one piece of relevant and accurate evidence from the Figures to support the answer. • A justified decision is reached.	4–6
Level 1	• Simple reason(s) showing basic knowledge and understanding that link to the question. • Use of supporting evidence from the Figure(s) is limited (relevance/ accuracy/detail). • A justified decision is attempted.	1–3
Level 0	No creditable response.	0

Section A

Answer **two** questions.

1 The natural environment of Pakistan

Question	Answer	Marks
1(a)(i)	**Study Figure 1.1 which shows the location of gypsum and limestone deposits in southern and western Pakistan.** **Which country is labelled as <u>X</u> on Figure 1.1? Tick (✓) the correct answer.** **A** Afghanistan 1 × 1 mark	**1**
1(a)(ii)	**Use Figure 1.1 to compare the distribution of gypsum deposits and limestone deposits in Pakistan.** Ideas such as: • gypsum quite linear / north to south / in centre of Pakistan whereas limestone more scattered/widespread • both limestone and gypsum deposits concentrated along the administrative border / border between Punjab and Balochistan • one limestone deposit located close to the international border on the west / in Balochistan but gypsum are all further to east • several limestone deposits but only one gypsum deposit near the border of Sindh/Balochistan. All valid material must be credited. 2 × 1 mark	**2**
1(a)(iii)	**Which process is gypsum used for in Pakistan? Tick (✓) the correct answer.** **A** cement production 1 × 1 mark	**1**
1(a)(iv)	**Define the term non-metallic mineral.** Minerals that do not contain any metal elements. 1 × 1 mark	**1**

Question	Answer	Marks
1(b)(i)	**Study Figure 1.2 which shows climate information for Pakistan.** **Use Figure 1.2 to describe the main features of the climate.** **Refer to data in your answer.** Ideas such as: • temperature peaks in June/July / at 30/29 °C • temperature ranges from 9 to 30 °C • rainfall is spread throughout the year • rainfall peaks in July/August / at 60/62 mm. All valid material must be credited. 3 × 1 mark Reserve 1 mark for accurate use of data.	**3**
1(b)(ii)	**Explain <u>two</u> factors that affect temperature in Pakistan.** Ideas such as: • the tilt of the earth changes seasonally; so hotter summer due to northern hemisphere tilted towards the sun / cooler winter as tilted away from the sun • nearer the equator (low latitude) the sun's rays focus on a small area; so are more concentrated producing higher temperatures / further from the equator (high latitude) the sun's rays focus on a large area; so are less concentrated producing lower temperatures • further from the equator (high latitude) cooler temperatures; as sun never gets high above the horizon • differences in altitude; as for every increase of 1000 m in altitude the temperature decreases by average of 6.5 °C / as further away form the heat of the land / lower air pressure so air molecules further from each other • continental effect; where inland areas heat up quickly in summer causing hotter summers / lose heat quickly in winter producing cooler winters. All valid material must be credited. 1 mark idea + 1 mark development × 2 Some ideas and development points are interchangeable.	**4**

Question	Answer	Marks
1(c)	**Assess the environmental value of forests for Pakistan.** Ideas such as: • prevent soil erosion / increase soil fertility • absorb CO_2 / produce O_2 • mangroves provide coastal protection • increase rainfall • provide interception • can reduce flooding • provide shade / cooling temperatures • habitats for wildlife • maintain/increase biodiversity. Alternative ideas: Social value: • recreational experiences • community well-being • mental and physical health. Economic value: • logging/timber for industry/construction • jobs in forestry / tourism. All valid material must be credited. 5 × 1 mark: • 4 × 1 mark (reserve one mark for an alternative idea) • 1 × 1 mark for a judgement	**5**

Question	Answer	Marks
1(d)	**To what extent can water resources be managed sustainably in Pakistan?** **Give reasons and examples to support your judgement.** Use Table A to mark candidate responses to this question. Ideas such as: Water resources can be managed sustainably: • modern irrigation methods are being implemented to reduce waste water and reduce the chance of waterlogging • increased education and awareness campaigns can lead to more efficient use of water at a range of scales from household use through to how water is used in industrial processes • increased use of technology to harvest rainwater, recycle water and encourage recharging of groundwater sources • many climate change adaptation methods are focused on water management (e.g. diverting floodwater for agricultural use). Water resources are difficult to manage sustainably: • climate change is causing changes to frequency of extreme weather events such as droughts and heavy rainfall which affect water supplies in different ways • increased population growth places increased pressure on water supplies • in some areas there are not enough water storage facilities, or lack of water treatment facilities • growth of industry can lead to increased water pollution and contamination of drinking water. All valid material must be credited.	**8**

2 The people and places of Pakistan

Question	Answer	Marks
2(a)(i)	**Study Figure 2.1 which shows changes in Gross Domestic Product (GDP) per capita and death rate in Pakistan between 2012 and 2022.** **Figure 2.1 shows information about the death rate in Pakistan.** **State <u>one</u> other component of population structure.** • birth rate • natural increase • migration • life expectancy 1 × 1 mark	**1**
2(a)(ii)	**Which statement is the correct definition of GDP per capita? Tick (✓) the correct answer.** **C** the value of all goods and services produced in a country, divided by the total population 1 × 1 mark	**1**
2(a)(iii)	**Use Figure 2.1 to describe the relationship between GDP per capita and death rate in Pakistan.** Ideas such as: • overall/between 2012 and 2022 as GDP per capita increases the death rate decreases • between 2018 and 2019 there was a decrease in both GDP per capita and death rate • between 2020 and 2021 there was an increase in both GDP per capita and death rate • between 2012 and 2018 the death rate decreased by 0.6 people per 1000, while the GDP per capita increased by US$384. Accept any relevant example of years. All valid material must be credited. 2 × 1 marks	**2**
2(a)(iv)	**Which stage of the Demographic Transition Model (DTM) shows a population with high birth rates and rapidly falling death rates? Tick (✓) the correct answer.** **B** Stage 2 1 × 1 mark	**1**

Question	Answer	Marks
2(b)(i)	**Study Figure 2.2 (Insert) which shows part of an urban area in Pakistan.** **Identify <u>three</u> ways land is used in the urban area shown.** Ideas such as: • transport • residential area / housing • industrial areas / industry • commercial area / retail offices • open spaces / leisure. All valid material must be credited. 3 × 1 mark	**3**
2(b)(ii)	**Explain <u>two</u> ways urbanisation creates opportunities for Pakistan.** Ideas such as: • increased population; which creates a larger workforce • attracts investment; which increases Gross Domestic Product (GDP) • involves infrastructure building; which improves accessibility • improved utilities; which can improve quality of life. All valid material must be credited. 1 mark idea + 1 mark development × 2 Some ideas and development points are interchangeable.	**4**
2(c)	**Assess the effectiveness of <u>one</u> approach to managing population growth in Pakistan.** Ideas such as: National policy: • family planning 2030 sets national goals • plan is designed to ensure women and girls are empowered/educated • maintain a balance between family size and resources • increased funds for reproductive health centres. Alternative ideas: • levels of literacy can be a barrier to accessing family planning information • remote areas are harder for services to access. All valid material must be credited. Responses will vary depending on the case study used. 5 × 1 mark: • 4 × 1 mark ideas (reserve one mark for an alternative idea) • 1 × 1 mark for a judgement	**5**

Question	Answer	Marks
2(d)	**'Social measures of development are the most useful for understanding quality of life in Pakistan.'** **How far do you agree with this statement? Give reasons and examples to support your judgement.** Use Table A to mark candidate responses to this question. Social measures are the most useful: • literacy rate can provide an indication of levels of education, which may have implications for the types of jobs people can access • maternal mortality rate, infant mortality rate, calorie intake, number of people per doctor all relate to aspects of health which is an important component of quality of life • calorie intake can indicate if people have enough money to buy nutritious food • social measures allow understanding of the experience of quality of life rather than just measures of wealth which may not be distributed equally. Other measures of development are the most useful: • economic measures such as GDP/GNI per capita provide an indication of relative income/wealth of people which can be easily compared across countries • economic measures can be easily used to monitor economic growth over time • composite measures such as Human Development Index include economic and social measures (GNI per capita, years of schooling and life expectancy) covering a range of social and economic factors, providing a more holistic view of development • composite measures allow for an assessment of quality of life beyond economic growth. All valid material must be credited.	**8**

3 Developing the economy of Pakistan

Question	Answer	Marks
3(a)(i)	**Study Figure 3.1 which shows information on the balance of trade in Pakistan in 2021.** **Use Figure 3.1 to calculate the difference in value between imports and exports. Tick (✓) the correct answer.** **C** $31.11 billion 1 × 1 mark	**1**
3(a)(ii)	**Describe <u>two</u> ways transnational corporations (TNCs) are important for Pakistan's economy.** Ideas such as: • can create new job opportunities • provision of training for skilled jobs • can attract further investment / multiplier effect • can lead to improved infrastructure • increased international trade • increased exposure to international brands. All valid material must be credited. 2 × 1 mark	**2**
3(a)(iii)	**What is a feature of export processing zones (EPZs)? Tick (✓) the correct answer.** **D** reduced customs duties 1 × 1 mark	**1**
3(b)(i)	**Study Figure 3.2 which shows the proportion of different energy sources used to generate electricity for Pakistan in 2003 and 2023.** **Use Figure 3.2 to complete the statement about the use of coal as an energy source in Pakistan. Choose the correct word or phrase and place it in the space provided.** increased 1 × 1 mark	**1**

Question	Answer	Marks
3(b)(ii)	**Use Figure 3.2 to describe changes to the use of <u>two</u> energy sources, other than coal, between 2003 and 2023.** **Refer to data in your answer.** Ideas such as: • reduction in the use of oil from 34 to 23% • increased use of renewable energy • increase range of energy sources used • decrease in gas from 46 to 40%. All valid material must be credited. 3 × 1 mark Reserve 1 mark for accurate use of data.	**3**
3(b)(iii)	**Explain <u>two</u> ways Pakistan is improving its energy security.** Ideas such as: • development of new solar energy power projects, such as Layyah Solar PV Park in Punjab; which provides renewable energy / potential to provide 1200 megawatts of power • plans to increase capacity for renewable energy generation / add 7 gigawatts of energy by 2025; which reduces reliance on imports of energy • increased the number of coal power plants; which reduces reliance on imported coal • expansion of nuclear power capacity at Karachi Nuclear Power Complex/ Chasma Nuclear power complex; which increases power capacity produced within Pakistan. All valid material must be credited. 1 mark idea + 1 mark development × 2 Some ideas and development points are interchangeable.	**4**

Question	Answer	Marks
3(c)	**Assess the advantages of <u>one</u> approach used to increase food security in Pakistan.** Ideas such as: • mechanisation and use of technology in food production can increase yields which will increase availability of food • use of genetically modified crops will increase yields / increase resistance to pests / make crops more tolerant to changes in climate • trade agreements can ensure reliable supplies of staple crops that are in short supply • government support to provide subsidies for farmers, or increased investment for agricultural technology, can support a wide range of farmers. Alternative ideas: • increased yields may not be sufficient to keep up with population growth • distribution of food resources may be concentrated in some areas • remote areas may have difficulty accessing technology/education programmes • trade agreements may not be able to control the standard of goods imported • extreme weather events may damage crop yields. All valid material must be credited. Responses will vary depending on the case study used. 5 × 1 mark: • 4 × 1 mark ideas (reserve one mark for an alternative idea) • 1 × 1 mark for a judgement	**5**

Question	Answer	Marks
3(d)	**Evaluate the view that tourism creates more opportunities than challenges for Pakistan.** **Give reasons and examples to support your judgement.** Use Table A to mark candidate responses to this question. Ideas such as: Tourism creates more opportunities: • tourism in Pakistan has the potential to boost economic growth, generate jobs, and encourage cultural exchange; the tourism sector accounted for around 5.9% GDP in 2022 and 4.2 million jobs • tourism has the potential to support reduced unemployment and raise standards of living, particularly in rural areas which are popular tourist destinations such as Gilgit-Baltistan and Swat, which have experienced increased local employment due to tourism • tourism offers a wide range of environments to cater to tourist needs; from scenic beauty in areas like the Karakoram Mountain range and Hunza valley, to historic sites in cities like Lahore Fort • improvements in infrastructure that facilitate tourism can have other economic benefits; increased investment and the development of other industries. Tourism creates more challenges: • some locations may struggle to develop a tourist industry due to lack of developed infrastructure, poor road conditions, limited public transport or more limited utilities • increased tourism can lead to environmental degradation such as increased air pollution, increased waste generation, damage to natural habitats and deforestation • developments needed to provide for tourists require investment which may reduce funds for other activities needed for local residents, for example prioritising new hotel developments rather than housing • increased tourist activities could potentially erode local cultures or create tensions between tourists and local people. All valid material must be credited.	**8**

Section B

Answer **Question 4**.

4 Making a decision

Question	Answer	Marks
4(a)(i)	**Study Figure 4.1 (Insert) which shows an area in Pakistan that is experiencing urban growth.** **Use Figure 4.1 to identify <u>two</u> natural landforms that are limiting the growth of the urban area shown.** • mountains / valleys / steep slopes / rocky ground • sea / coastline • rivers • dense vegetation/forest 2 × 1 mark	**2**
4(a)(ii)	**State <u>two</u> causes of urban growth in Pakistan.** Ideas such as: • natural increase • rural-urban migration • availability of jobs / wide range of jobs / higher pay • increased infrastructure/utilities • availability of housing • access to education/health services • access to leisure/retail services. All valid material must be credited. 2 × 1 mark	**2**
4(a)(iii)	**Describe how urban growth increases the demand for energy.** Ideas such as: • more people in urban areas needing electricity • increased use of domestic appliances such as air conditioning/heating/ cooking • increased use of private cars / demand for public transport • more industries requiring energy for producing goods • more public services requiring energy e.g. hospitals/schools. All valid material must be credited. 3 × 1 mark	**3**

Question	Answer	Marks
4(b)(i)	**Study Figure 4.2 (Insert) which shows the number of homes affected by flooding in Sindh in 2022.** **Use Figure 4.2 to describe the distribution of homes affected by flooding.** **Refer to data in your answer.** Ideas such as: • it's uneven/varied • along river Indus / central belt of higher numbers of homes affected • several cities (Jacobabad/Nawabshah/Mirpur Khas) have high numbers / 30 000+ of homes affected • Karachi has below 1000 homes affected. All valid material must be credited. Reserve one mark for accurate use of data. 3 × 1 mark	**3**
4(b)(ii)	**State <u>two</u> economic impacts of flooding.** Ideas such as: • damage to/loss of properties/possessions • loss of income/businesses • cost of rebuilding • damage to infrastructure • damage to/loss of crops/livestock • disruption to transport • delays new construction projects. All valid material must be credited. 2 × 1 mark	**2**
4(c)(i)	**Study Figure 4.3 which shows some responses to climate change in Pakistan.** **Use Figure 4.3 to identify <u>one</u> way Pakistan aims to reduce carbon emissions.** • increased use of electric vehicles • increased use of renewable energy • afforestation 1 × 1 mark	**1**

Question	Answer	Marks
4(c)(ii)	**Suggest why having a national plan to manage climate change is important for Pakistan.** Ideas such as: • to have targets to work towards; so different organisations (e.g. governmental/NGO) can coordinate / what is done at a local scale contributes to national efforts • to help respond to international commitments / to ensure international agreements are adhered to; global greenhouse emission targets are met • raise public awareness; which means individuals might take actions e.g. to reduce their energy consumption • economic benefits / new opportunities; such as building new renewable energy facilities • increases resilience to climate change; by actions such as building cyclone shelters / flood defences which reduce risk. All valid material must be credited. 1 mark idea + 1 mark development × 2 Some ideas and development points are interchangeable.	**4**

Question	Answer	Marks
4(d)	**Study Figure 4.4 (Insert) which shows possible ways of mitigating and adapting to climate change.** **Two options have been proposed to help urban areas in Pakistan respond to the challenges of climate change.** **<u>Option A</u>: Invest more in renewable energy.** **<u>Option B</u>: Develop stronger flood defences.** **Choose the option you think is likely to be the most effective. Justify your decision.** **Use information from Figures 4.1, 4.2, 4.3 and 4.4 and your own knowledge and understanding of the environment of Pakistan to support your answer.** Use Table B to mark candidate responses to this question. Ideas such as: **Option A** Invest more in renewable energy is likely to be the most effective because: • renewable energy does not contribute to the enhanced greenhouse effect and slows down impacts of climate change • increased renewable energy can reduce carbon emissions which contribute to climate change • Pakistan's energy sector depends on imported fuel, due to low capacity of domestic refineries, so more renewables could reduce imports of fossil fuels • Pakistan has wind power capacity of over 1800 megawatts (MW) which can be transferred via the grid to meet the growing demand in urban areas • there are existing dams which could be used for increasing HEP capacity (Figure 4.1) • Pakistan has targets to reduce 50% of carbon emissions by 2030 / increased use of renewable energy by 60% (Figure 4.3) • huge potential for solar resources in Pakistan (Figure 4.4), given growth of buildings in cities there is lots of roof space that could be used for solar panels.	**8**

Question	Answer	Marks
	Option B Develop stronger flood resilience is likely to be the most effective because: • one impact of climate change is an increase in extreme weather events which can lead to flooding • Pakistan already experiences severe flooding and the cost of this in 2024 was $14.9 billion • the Asian Development Bank predicts that extreme river flooding could affect 5 million more people by 2044 / an additional 1 million people every year could be at risk of coastal flooding by 2100 • some projects and funding in cities are already focused on flood response (e.g. Pakistan Integrated Flood Resilience and Adaptation project), however more could be done as climate change impacts worsen • mangrove plantations could be extended to protect against storm surges/ sea level rise in coastal areas (Figure 4.1) • a large area of Sindh is vulnerable to flooding with 30 000+ homes affected in some areas in 2022 (Figure 4.2). As this is one of the most densely populated areas of the country, flood resilience is important • different types of flood protection could be used in urban areas, such as embankments and deepening the channel (Figure 4.4) which will reduce the risk of flooding. Candidates should justify their choice using their own knowledge and understanding and by using relevant evidence from the Figures to support and develop their ideas. Candidates should focus on why the option they have chosen is the most effective, but may also suggest why the alternative option is less effective or make a comparative statement about the two options. All valid material must be credited.	