Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

PAKISTAN STUDIES **0448/02**

Paper 2 Environment of Pakistan **May/June 2017**

MARK SCHEME

Maximum Mark: 75

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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Question	Answer	Marks
1(a)(i)	A Crops grown for own consumption/use/for the farmer and his family/use it for themselves; B Crops grown for sale/export/income/profit/grown commercially. 2 @ 1 mark	**2**
1(a)(ii)	Subsistence: Rice/vegetables/wheat; Cash: Rice/sugar cane/oilseeds/cotton/wheat. 2 @ 1 mark	**2**
1(a)(iii)	<u>Advantages</u> • 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. <u>Disadvantages</u> • 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; • **<u>Extra</u>** named input required, e.g. water/fertilisers; • Not seen as a healthy crop/artificial/genetically modified; • Lowers species diversity; • Shortfall in skills/knowledge to use them/needs training. **Note:** Reserve one mark for each of advantage and disadvantage. 4 @ 1 mark	**4**
1(b)(i)	A 27**<u>%</u>** (allow 26–28%) B Sindh 2 @ 1 mark	**2**

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

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

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

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

Question	Answer	Marks
2(a)(i)	First radial line at 0% and second at 73% (allow 72–74%) Correctly shaded using key 2 @ 1 mark	**2**
2(a)(ii)	1998–99 = 56% 2013–14 = 73% 73 – 56 = **17** (% increase) (allow 14–20) 1 @ 1 mark	**1**
2(a)(iii)	• Quicker/faster connection/more direct routes/saves time; • Cities/towns/rural areas will be better connected/connect remote areas; • Faster supply/delivery of raw materials/finished goods/ exports/imports/trade will be more efficient/quicker trade routes; • Promote industrial growth/industrialisation/industries will develop/build industrial estates along route; • To relieve pressure on existing roads; • Create employment opportunities/attract foreign investment; • To connect to Afghanistan and Central Asian Republic/or other named countries; • Establish new settlements along the route; • Increase development of tourism. 2 @ 1 mark	**2**
2(a)(iv)	• Rugged/hilly/undulating/sandy terrain (increases construction cost)/(due to extra bridges/cuttings/ embankments/extra length to curve around features); • Extreme aridity/heat/hot/high temperatures/sand/dust storms (making difficult working conditions for construction workers)/(causing dehydration/heat-related illnesses of workers/workers might find it exhausting/traffic can be hampered due to sand storms); • Remote/uninhabited/low population density areas (increasing cost of transporting/housing workers/so not cost effective)/(meaning a shortage of local labour); • Lack of government investment/government funding; • Opposition from tribal areas; • Lack of security/insurgency; • Lack of water; • High construction costs. ETC. **Note:** One mark for identification of appropriate idea and a further mark for development (in parentheses). **Note:** Max 2 marks if no development. 2 @ 2 marks	**4**

Question	Answer	Marks
2(b)(i)	• Mixing clay with water; • Placing mixture into rectangular moulds/mould the clay/moulded into brick shape/cuboid shape/put into stencils/blocks; • Leaving to dry in sunlight; • Firing/baking in kilns/furnace/heated in kilns to harden them/baked/heated in a furnace. **Note:** Processes do not have to be in the correct order. 3 @ 1 mark	**3**
2(b)(ii)	• Harvesting/cutting; • Collecting in bales/bundling together/stacking/tying them; • Laborious/carrying/lifting/picking up; • Manual work/done by hand. 2 @ 1 mark	**2**
2(c)(i)	• High salary/salaries higher/more work-related benefits/promotion available/handsome salaries; • Salaries more regular/stable/livelihood less at risk/fixed wages; • Better working conditions/examples, e.g. AC/more likely to be indoors/offices/factories; • Less likely to be manual/more likely to be higher skilled; • Perceived abundance of work available/wider variety of jobs/more job opportunities; • Fixed/regular hours/year round/contract. 2 @ 1 mark	**2**
2(c)(ii)	• Higher/better education/better/more schools/universities/ colleges; • More/better hospitals/greater access to healthcare; • Better housing/or examples, e.g. brick built housing; • Named better infrastructure transport/roads/railways; • Better/more regular supply of electricity/gas; • Improved/better sanitation/sewage systems; • Piped/clean/drinking/regular supply/potable water; • More entertainment/recreation/leisure facilities or named examples, e.g. cinema; • Variety of shops/shopping malls; • Reliable access to food/more food available/more regular food supply; • Bright lights/glamorous lifestyle. 3 @ 1 mark	**3**

Question	Answer	Marks
2(d)	Levels marking Level 1 (1–2 marks) Simple point addressing either a problem or benefit (1). Simple points addressing either problems or benefits or both (2). Level 2 (3–4 marks) Developed point(s) explaining either problems or benefits (3). Developed point(s) explaining both problems and benefits (4). No evaluation. Level 3 (5–6 marks) Developed points explaining both problems and benefits. Evaluation giving clear support to problems or benefits or a named example (5). Developed points explaining both problems and benefits. Evaluation giving clear support to problems or benefits and a named example (6). Content Guide: Answers are likely to refer to: Benefits • Employment opportunities • Improvements to roads/other infrastructure • New settlements • Educational/recreational facilities • More trade for local shops • More work for local ancillary/related industries Problems • Farmland/grazing • Air pollution/dust from chimneys, etc. • Visual pollution/eyesore • Roads/railways congested • Attracts migrants • Uses large amounts of water/power ETC. **Note:** Answers must relate to local people not the nation.	**6**

Question	Answer	Marks
3(a)(i)	China / UAE 1 @ 1 mark	1
3(a)(ii)	Imports • China/India – regional superpower/strong economy/neighbouring country/has land links; • China/India – source of capital/manufactured goods/ technological goods/import machinery; • UAE/Kuwait/Saudi Arabia – source of oil; • Malaysia – source of palm oil; • India – source of primary commodities, e.g. fruit and vegetables. Exports • Any named country – increased sales/markets/market share/enlarge market share; • China/Afghanistan – neighbouring countries with land links; • Afghanistan – foodstuffs such as rice, sugar; • China – to maintain relations/political ties with regional superpower; • UAE – nearby country via sea/Arabian Sea/Makran Coast; • USA/Germany/UK – developed economies raw materials, e.g. cotton yarn/woven cloth or manufactured goods, e.g. sports goods, linen, suits. **Note:** Country must be named plus import or export. **Note:** No additional products or countries allowed. 3 @ 1 mark	3
3(b)(i)	• Lower/S Sindh/Lakhra/Jhimpir/Sonda/Thar/Thar desert; • N/NW Balochistan/Quetta/Sor/Mach/Degari/Khost/ Shahrig/Harnal/Duki/Chamalang; • Salt Range/Dandot Pidh/Potwar plateau; • Makerwal. 2 @ 1 mark	2
3(b)(ii)	A Bar accurately drawn on Fig. 4 B 2005 C Decreased **Note:** Width within demarcations and height must touch the 3m line. 3 @ 1 mark	3

Question	Answer	Marks
3(b)(iii)	• Existing coalfields becoming exhausted/existing coal measures becoming harder to access (therefore increasing cost of extraction); • High cost of extraction/exploration/equipment/ technology (leads to indebtedness); • Lack of government funding (which a developing country with high population growth cannot afford); • Lack of/poor transport links to/from coal producing areas/potential coal producing areas (which discourages further investment); • Lack of skilled/highly trained labour (therefore requiring expensive foreign expertise); • Insurgency/lack of security (which discourages foreign mining companies from operating/investing); • Decreased demand for fossil fuels/change to cleaner fuels/renewables (due to world agreements/targets); • Coal from Pakistan is low grade (so has to be imported from other countries); • Domestically replacing coal with gas (as Pakistan has many gas fields, e.g. at Sui/one of largest in world); • Change from coal to oil/diesel for trains (due to partition). ETC. **Note:** One mark for identification of appropriate idea and a further mark for development (in parentheses). **Note:** Max 2 marks if no development. 2 @ 2 marks	**4**
3(c)(i)	The difference between the value of goods imported and exported by a country/the value of imports subtracted from exports/the value of exports minus imports. 1 @ 1 mark	**1**
3(c)(ii)	• Value of goods imported is more than the value of goods exported; • Uncompetitive quality/low quality of exports; • Unable to fulfil domestic needs of population; • Import tariffs/quotas in other countries; • Dependency on import of capital goods/machinery/ oil/high value added goods; • Dependency on importing/exporting agricultural products/food/named examples; • Depreciating own currency/rupee against dollar; • Trade embargoes imposed by other countries. 3 @ 1 mark	**3**

Question	Answer	Marks
3(c)(iii)	• Foreign debt; • Dependence on foreign aid; • Need to use country's cash reserves/assets/loss of foreign exchange; • Development projects cancelled/delayed; • Rise in taxation; • Strategies to increase exports/high value exports/ Government encourages local industry to export; • Country's currency depreciates, so imports become expensive. 2 @ 1 mark	**2**
3(d)	Levels marking <u>Level 1</u> (1–2 marks) Simple point addressing any view (1). Simple points addressing any views (2). <u>Level 2</u> (3–4 marks) Developed point(s) explaining one view (3). Developed point(s) explaining different points of view (4). No evaluation. **Note:** Max 3 for explanations for and against **one** view only. <u>Level 3</u> (5–6 marks) Developed points explaining different points of view. Evaluation giving clear support to preferred view or a named example (5). Developed points explaining different points of view. Evaluation giving clear support to preferred view and a named example (6). <u>Content Guide:</u> Answers are likely to refer to: <u>Great improvement</u> • Creates many employment opportunities • Examples of employment opportunities • Better paid jobs in tertiary sector • Improved working conditions <u>Small improvement/no improvement</u> • Creates relatively few employment opportunities • Reasons why • Lack of education/skills • Cost of computers • Less demand from developed countries • Poor electricity infrastructure/load shedding • Can be long working hours ETC.	**6**

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>4(a)(i)</td><td>Any three of (L to R):
canal, aquifer, water table, maintenance shaft, tunnel
3 @ 1 mark</td><td>3</td></tr>
<tr><td>4(a)(ii)</td><td><table><tr><td>Barrage</td><td>River</td></tr><tr><td>Marala/Khanki/Qadirabad</td><td>Chenab</td></tr><tr><td>Jinnah/Chashma/Taunsa/Guddu/Sukkur/Kotri</td><td>Indus</td></tr><tr><td>Rasul/Trimmu</td><td>Jhelum</td></tr><tr><td>Panjnad</td><td>Panjnad</td></tr><tr><td>Balloki/Sidhnai</td><td>Ravi</td></tr><tr><td>Islam/Sulaimanke</td><td>Sutlej</td></tr><tr><td>Munda</td><td>Swat</td></tr></table>Note: Named dams not allowed
2 @ 1 mark</td><td>2</td></tr>
<tr><td>4(a)(iii)</td><td>• Irrigation/release water for irrigation;
• Provide water supply to perennial canals/link canals;
• Flood control;
• Flow of water controlled;
• To stimulate economic development/industry/settlement.
2 @ 1 mark</td><td>2</td></tr>
<tr><td>4(b)(i)</td><td>• Smoke/fumes/gases/named gases/harmful gases <u>from</u> factories/tanneries/industries/chimneys/power stations;
• Smoke/fumes/gases/named gases <u>from</u> vehicle exhausts;
• Burning fossil fuels;
• Clearing forests by burning;
• Release of gases/methane from livestock/rice/paddy fields/landfill;
• Burning domestic rubbish/incineration;
• Air pollution/dust from mineral extraction/mining/ quarrying.
2 @ 1 mark</td><td>2</td></tr>
</table>

Question	Answer	Marks
4(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	**4**
4(c)(i)	A Domestic B 94**%** (allow 93–95%) 2 @ 1 mark	**2**
4(c)(ii)	One of: Beverages/soft drinks/juice industry/dyeing/tanning/printing/ iron/steel/nuclear/textiles/chemical/pharmaceutical/hydel/ HEP/paper/tourism/leisure/inland fish farms. 1 @ 1 mark	**1**
4(c)(iii)	• Seepage from beds of canals/absorbed into the soil/land/no canal lining; • Evaporation/evapotranspiration from surface of canals/tanks/flooded land; • Excessive runoff of water immediately into streams/rivers; • Theft of water/theft from canals; • Water drawn up by vegetation on side of canal; • Mismanagement. 3 @ 1 mark	**3**

Question	Answer	Marks
4(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 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 infrastructure • Prevents loss of water downstream into sea • Collects rainfall/snowmelt • Reservoirs feed perennial canals • Can store large amounts of water Against infrastructure • Source of conflict between countries and provinces • Social issues • Loss of fresh water at Indus Delta • Water intrusion into Sindh • High initial investment • Little use in Balochistan where rivers dry up • Mismanagement by provincial/national government • Siltation occurs For water saving • Planting trees • Lining canals • Careful monitoring/regulation of amount of water used • Better forms of water storage in homes • Water meters in homes/industries Against water saving • Long time scale required to educate sufficient number of people • Resistance to education • Water a valuable raw material in industry • Growing population with increasing demand for drinking water • Development goal to increase availability of water ETC.	**6**

Question	Answer	Marks
5(a)(i)	• Morgah/Rawalpind – close to oilfields (in Potwar Plateau); • Central Punjab – close to oilfield; • Karachi/Korangi – near oil terminals/close to oilfield/port; • Mahmood Kot/Muzaffargarh – terminus of crude oil pipeline from Karachi. **Note**: No credit for reason only 2 @ 1 mark	**2**
5(a)(ii)	Bar correctly drawn on Fig. 4 **Note:** Tolerance: imported 180–190, produced 55–65. 1 @ 1 mark	**1**
5(a)(iii)	The amount of oil imported increased/higher/rose/figures from 150 to 370–380; The amount of oil produced decreased/fallen/figures from 60–70 to 55–65/almost constant/stayed the same; The total amount of oil increased/overall it went from 210–220 to 430–440. **Note:** a tolerance of ± 5% allowed except at 150 value. 2 @ 1 mark	**2**
5(a)(iv)	• Small reserves/potential oilfields not explored/small amount produced; • Lack of government investment/funding for further exploration/lack of money for developing oil fields/ exploration/expensive equipment; • Lack of technology/expertise for extraction/exploration/ lack of skilled labour; • (Large/increasing demand for) oil for vehicles/transport; • Heating/domestic use/cooking; • Electricity generation/electricity; • Manufacturing/manufactured products; • Cannot exploit/explore reserves due to tribal opposition/ insurgency; • Due to population growth. 2 @ 1 mark	**2**
5(b)(i)	**A** Positive correlation/as population increases, electricity production increases/both increasing/population is always higher/more than electricity production (or vice versa); **B** Population increases: electricity production remains same/very slightly increases/population kept increasing/ electricity did not have much change. 2 @ 1 mark	**2**

Question	Answer	Marks
5(b)(ii)	• Population increasing (greater need/greater use of electricity in homes/businesses) (named example of new technology in home/business)/(new towns have to be built because growing population puts a burden on electricity); • Increased affluence for some (enables more electrical appliances in the home or named examples/items are becoming more affordable); • Little new investment in new power stations (foreign investors less willing to invest due to political instability) (other government priorities such as healthcare/ education/housing/transport/alleviating poverty); • Pakistan has small/inaccessible/depleting fossil fuel reserves (fossil fuels expensive to extract/poor quality/ have to import); • Renewable energy plants expensive to construct; • Power losses due to old/long transmission lines; • Power theft (people diverting existing power sources for their own use); • Most people live in rural areas (electricity does not reach there/lack of infrastructure/power lines); • Many power plants are not working to full capacity (as a result of siltation in dams and reservoirs)/(they are still under construction); • Power breaks down (lack of expertise to handle it)/(due to old machinery); • More rural to urban migration (means demand cannot be fulfilled); • Seasonal variations (less HEP generation in winter as less rainfall/snowmelt at times of peak demand). ETC. **Note:** One mark for identification of appropriate idea and a further mark for development (in parentheses). **Note:** Max 2 marks if no development. 2 @ 2 marks	**4**
5(c)(i)	Rectangular, solar **panels** are made up of many solar **cells** which convert the **light** energy from the sun into electrical energy. They can be placed on the **roofs** of houses and other buildings. Large arrays of solar panels can be sited on the ground, for example, in deserts. Solar panels should face **south** in order to collect as much of the sun's energy as possible. Other solar power systems use the sun to heat water and the **steam** is then used to turn a turbine. 5 or 6 @ 3 marks 3 or 4 @ 2 marks 1 or 2 @1 mark	**3**

Question	Answer	Marks
5(c)(ii)	• Expensive technology/expensive investment for government; • Small scale/only generates small amounts of electricity; • Only at coastal sites; • Hazardous to marine life/damages habitats; • Disruption to shipping/fishing areas; • Difficult to set up/inadequate technology; • Not enough output to meet demand; • Can be damaged or disrupted by cyclones or tsunamis; • Shortage of expertise/knowledge/skills to set up. 3 @ 1 mark	**3**

Question	Answer	Marks
5(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 large-scale • Funding available from China • Provide very large amounts of power from small amount of uranium • Large coal reserves Against large-scale • Large sums of money/loans needed • Problems with disposing of/reprocessing/storing waste • Danger of insurgency threat/accident • Danger of flooding • Coal extracted in Pakistan is poor quality for power generation • Oil expensive to import • Large coal reserves not exploited • Fossil fuel reserves are depleting • Political issues between provinces with the construction of multi-purpose dams over division of water For small-scale • Lower cost to maintain • Renewable resources do not deplete • Renewable resources do not pollute the environment • Biogas – cheap source of energy • Wind – available land in Balochistan highlands • Solar – many parts of Pakistan experience 250–300 sunny days per year Against small-scale • Do not contribute/only small amount to national grid • Renewables only generate small amount of energy • Wind/solar have high construction cost • Wind is considered unsightly/harms wildlife • Not constantly producing energy • Biogas decreases availability of manure for organic fertiliser ETC.	**6**