UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Ordinary Level

MARK SCHEME for the May/June 2012 question paper

for the guidance of teachers

2059 PAKISTAN STUDIES

2059/02 Paper 2 (Environment of Pakistan), maximum raw mark 75

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.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

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1 (a) **Study Photographs A, B and C (Insert)**

(i) **Name the forest types A, B and C and write the correct letter for each area shown on Fig. 1**   [4]
A   Coniferous / alpine
B   Mangrove
C   Tropical thorn / Rakh / Irrigated / Riveraine / Bela
(3 for names, 1 for all areas correct)

(ii) **Describe the appearance of the forest shown in Photograph C.**   [3]
green / healthy
dense / close together
plantation / planned / in lines
varied height
form a canopy / canopy open / crowns meet / provides shade
no undergrowth / bare floor
same species
shisham / babul

(iii) **Explain the importance of the forest in Photograph B to fishermen and fishing villages.**   [3]
breeding area / many fish there (max 1 mark for ref. to fish)
source of income
protection to villages (against storms, floods, tidal waves etc.)
firewood
fodder / food
timber / wood for boats, houses etc.

(iv) **Why does the forest in Photograph A appear to be in an area of afforestation?** [3]
regular pattern / evenly distributed / in blocks
straight lines
blocks of same height / age / young trees
blocks of same species
evidence of deforestation / cutting

(b) (i) **State two effects of deforestation in mountain areas.**   [2]
Increased surface runoff
soil erosion / leaching / infertile
landslides / avalanches
floods
less rainfall   } climatic change
higher temperatures   }
loss of habitat / rare species
shortage of firewood / food
siltation in reservoirs (dams)

(ii) **Explain how <u>one</u> of these could be controlled.**

<u>Allow a 2nd mark for development of any line e.g. quick growing trees</u>

<u>(Soil erosion etc. controlled by)</u>
planting trees <u>to hold the soil</u>
planting trees <u>to protect the soil</u>
terracing
contour ploughing
selective cutting
education / awareness
<u>(Siltation controlled by)</u>
Silt traps
Dredging / removal of silt from reservoirs
<u>(Flooding controlled by)</u>
Embankments
Dams / barrages
<u>(Climatic change controlled by)</u>
Reduce burning of fossil fuels
Controls on emissions
Laws / treaties etc.
<u>(Loss of habitat controlled by)</u>
Establish reserves
Selective cutting
Rangers / laws
<u>(Shortage of firewood controlled by)</u>
Use of alternative fuels (other than firewood) eg. LPG / natural gas

(c) **CRAFTS   TOURISM   CLIMATE   SOILS**

With reference to **two** of the above, explain how a trees can be a valuable resource for the people who live in mountain areas. **[6]**

<u>Credit only once</u>
'for income / employment'
Improved standard of living / quality of life / better lifestyle

<u>Res. 2 for each choice</u>
CRAFTS – small scale / cottage industry, work for locals, income, furniture, toys etc. sale to tourists, local need, export, for raw material

TOURISM – scenic beauty (or similar) shade, picnics, nature study, photography, to buy crafts

CLIMATE – increases transpiration, increases humidity, more rain, shade, to lower temperature
reduce pollution / more oxygen / fresh air

SOILS – leaf fall creates humus, more fertility, can grow crops, pastures,
prevents erosion / landslides / soil erosion, prevents flooding,

[25]

2 (a) Study Fig. 2 and name

(i) the line of latitude A

36 °N

(ii) the mountain pass B

Khunjerab

(iii) the road C

Karakoram Highway / KKH / Silk Road

(iv) the province D(4)

Northern Area(s) / FANA / Gilgit – Baltistan

(b) Study Fig. 3 showing the climate of Gilgit.

(i) What is the maximum temperature, and in which month does it occur? [2]

27.5 °C
July

(ii) In which season of the year is the rainfall highest? [1]

Spring / early summer / March to May

(iii) Compare the climate of the months May to September with the months from November to February. [4]

May to September	November to February
Hotter	Colder
Over 18 °C / 18–27.5 °C	Under 12 °C / 3–12 °C
Wetter	Drier
Variable rain low/increasing	rain/snow fall
6–26 mm	2–6 mm

All figures must be comparative, and accurate

(c) **In what ways does the winter climate make life difficult for people w~~h~~ mountainous area?**

snow covers ground (or reference to snow)
water shortage / water freezes
no farming in winter / nothing grows / need to store food / no fishing
live indoors / cannot work outside
animals kept in sheds / need feeding / no pasture
roads or railways blocked / closed / no travel / communication
damage to buildings eg. by avalanches, landslides, frozen pipes / death of people
fog / no air travel
power lines cut
telephone lines cut / no telecommunication
no tourism
need to keep warm / need for heating
long nights / short days
less income / less work / less trade / economic activity stops

(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

[25]

3 **(a)** Study Fig. 4 showing the climate of Sialkot.

   (i) Circle on the *x*-axis

   A   the month when rice would be planted.
        Any <u>one</u> 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 <u>or</u> October   **[3]**

   (ii) Explain how canal irrigation is used and controlled to grow rice.   **[4]**

   from river / reservoir / dam / barrage / another canal
   closed or opened (by sluice or gate)
   field flooded in preparation / for nursery beds / before transplanting
   kept flooded during growth
   to a depth of about 30–37 cm / 12–15 inches
   drained before harvest

(b) Study Fig. 5 showing wheat production.

   (i) What was the production in 2008?   **[1]**

   21 million tonnes / 21 000 000 tonnes

   (ii) Compare this to the production of wheat in the years from 1999 to 2007.   **[2]**

   higher than in 1999 / 2001/02/03/04
   but not as high as 2005 / 2007
   same as 2000 / 2006

   (iii) Explain the reasons for the changes in production over these years.   **[4]**

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

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

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

(d) Study Fig. 6.

  (i) What is the percentage of goods carried by rail?

    4, 5, 6 or 7

  (ii) Compare the advantages of transporting goods by road and rail.   **[4]**

    <u>All answers must be comparative</u>.

    <u>Road</u>
    Door-to-door / goes everywhere
    Reaches all areas / remote areas / more roads
    Available to all / no special vehicles
    More modern / better maintained
    Better for short distances / local deliveries
    Cheaper <u>because</u>
    Faster <u>because</u>

    <u>Rail</u>
    Only goes to stations
    Limited network
    Cheaper <u>because</u>
    Faster <u>because</u>
    Carries more bulky / larger / heavier loads
    Old infrastructure / equipment
    Better for long distances

    [25]

4 (a) Study Fig. 6.

  Name on the map

  (i) A the port where iron ore and coal are imported,

    (Port) Qasim

  (ii) B the site of the Pakistan Steelworks,

    Pipri

  (iii) C the lake that supplies water to the Pakistan Steelworks,

    Haleji

  (iv) D the destination of the motorway from Karachi.

    Hyderabad   **[4]**

(b) Explain why the Pakistan Steelworks is called 'a large scale industry'.

handles large quantities of raw materials
large production / large output / generates large income
large area / site
large electricity use / local power station
large gas use / large pipeline
large workforce
higher output per worker
large capital / investment
mechanised / automated
standardisation of products

(c) Study Fig. 7 showing imports of steel

(i) What is the value of imports in 2008?   **[1]**

105 000 million Rs

(ii) By how much has this increased since 1998?   **[1]**

85–88 000 million Rs.

(iii) Suggest one reason for this increase and explain this.   **[3]**

Named reason (1 mark)
Industrialisation / growth of industry
Named use eg. construction, machinery,
Increase in cost of steel
Devaluation of Pakistan currency
Growing population

Explanation of that reason (2 marks)
Needs machinery
Needs raw materials
Building of new houses / industrial estates
Road and rail repair
Better agriculture
Shortage of world steel supplies
Devaluation of Pakistan currency
Any reason from the first section above can be credited as an explanation

(d) **WATER ELECTRICITY GAS PIPES TELEPHONE ROADS**

Choose two types of infrastructure from the list above and for each explain their impor
to businesses on an industrial estate.

(Res. 2 for each type)

Water – for washing, cooling, cleaning,
food processing, chemicals, dyeing / bleaching

Electricity – for power / energy / machinery, light, heat, ventilation, computers,
faster / better / more efficient work

Gas – for power, heat, light, cooking food,
raw material <u>for</u> fertiliser / chemical industry

Telephone – (for contact with) suppliers and buyers, quick response, may be in other places,
for sales, orders, marketing, advertising,
line to computer

Roads – (for transport of), inputs, outputs, people,
less breakage / damage of valuable goods, quick travel, attracts investors

(e) What are the benefits and problems of developing new industrial estates? (6)

<u>Benefits (res.2)</u>
Employment / jobs / raise incomes
Goods for local needs
Goods for export / more trade
Increase GNP / GDP / increases national income / economic growth
Reduce imports
Attracts more investors / entrepreneurs
Development of <u>named</u> infrastructure e.g. roads, power, telecomm
Reduces emigration / if in rural areas reduces rural-urban migration
More competition improves quality
Stimulates growth of service industries

<u>Problems (res.2)</u>
Cost
Lack of skilled labour
Loss of agricultural land / trees
Depletion of <u>named</u> natural resources eg. water, gas
Lack of <u>named</u> infrastructure e.g. electricity, roads, water
Lack of government support
<u>Named</u> pollution (max 2) e.g. water, air, land
Need for more imports with e.g. machinery, raw materials, oil
(Increases) rural-urban migration

[25]

5 (a) Study Fig. 9 showing population density in Sindh.

(i) Describe the distribution of the areas with a population density of 201 to ~~people per square kilometre.~~

Northern border with Balochistan or Punjab / in the north or north-west
follows river Indus
central areas
towards to south-east / east of river towards south
named city or district (not Karachi) (max. 1)
e.g. Hyderabad, Sukkur, Larkana, Shikarpur, Jacobabad

(ii) What is the lowest population density shown on the map? [1]

<u>under</u> 50 persons per square kilometre

(iii) Which area has the lowest population density? [1]

SE Sindh / Thar(parkar)(desert)

(iv) Explain the reasons for a high population density in the Karachi area. [6]

rural-urban migration
high birth rate / low death rate (max 1)
industrial / port / administration / trade / commerce / fishing (max 2)
good housing
opportunities for businessmen / for trade
employment / work / jobs
example of type of work (but NOT fishing)
(perceived) better living standards / bright lights / entertainment
better infrastructure with eg. such as roads, rail / airport / electricity / gas / water /
(max 1)
better services with eg. such as education, health, sanitation (max 1)
more food
maritime climate more pleasant /moderate
refugees (from Afghanistan / after the partition in 1947)
old capital city of Pakistan / present capital city of Sindh province

(b) Explain the difference between density and distribution of population. [2]

density – numbers per unit area
distribution –   the spread of people in an area
          areas of different density within a larger area (or similar)

(c) Study Fig. 10 showing the increase in population in Karachi.

(i) What was the population in 2010? [1]

13 million

(ii) By how much is this expected to increase from 2010 to 2020? [1]

4 million

(iii) **What problems can be caused in an urban area by a high population den**

poor housing / living on the streets / slums / Katchi Abadi / overcrowding
unemployment
poverty
lack of hygiene / waste dumped / litter
sickness / disease / poor health
high death rates
crime / drugs / terrorism
traffic congestion / pressure on roads / rail
shortages / strain on <u>named</u> resources / services / utilities with e.g. such as schools, health, food, (max 2)
<u>named</u> pollution (max 2)
low quality of life

(d) Read the article published in 2009.

To what extent can self-help schemes, such as that in Orangi, succeed in improving the living conditions in this and other slum areas? **[6]**

<u>Do not credit quotes from the Article. The candidate is expected to comment on these, or use their own ideas.</u>

<u>Success (res.2)</u>
Water	Cleanliness, hygiene, safe to drink
Sanitation	Less disease / better health
	Lower death rates, infant mortality
Power	Electric light, air con.
Roads	Opportunities for trade etc.
Housing	Improvements or removal of slums / squatters, houses for the homeless stronger, bigger, drier
Health centres	better health, less disease, advice, effect on BR, DR and LE
Schools	better qualified for jobs, effect on health and BR
Cheap loans	more opportunities to set up businesses, leading to jobs,

Safer / less crime / terrorism
Higher income / will make money / economic development
Set up / development of business, industry

<u>Failure (Res. 2)</u>
Lack of money / investment
Lack of support co-operation
Lack of education / skills to do the task
Corruption
Change of governments/political instability
Huge size of task / high cost
Will take time
Or more specific e.g. shortage of water, electricity, education

[25]