MARK SCHEME IGCSE GEOGRAPHY PAPER 2 (0460/2) NOVEMBER 2002

N.B. normally one line in mark scheme equals 1 mark,
oblique symbol signifies alternatives,
there may be other acceptable answers where candidates are encouraged to give descriptions / reasons or views

1 **(a)** **(i)** long time to grow from 1 to 2 billion - 123 years,
shorter time for each extra billion,
2 - 3 billion - 33 years,
3 - 4 billion - 14 years,
4 - 5 billion - 13 years,
5 - 6 billion - 12 years.

4 at 1 mark [4]

(ii) death rate higher than birth rate in some countries,
increase in death rate in some countries -
aids etc.,
fall in birth rate,
fall in death rate,
increased awareness / education about family planning / contraception,
emancipation of women etc.

4 at 1 mark [4]

(b) **(i)** **A** more countries with 100 million,
rapid increase within countries - **must be** supported by data from Fig. 2 e.g. rapid increase in India, China, Indonesia, Brazil.

2 at 1 mark

B slower growth,
even decline -
example **must be** supported by data from Fig. 2
- e.g. Russia, Japan.

2 at 1 mark [4]

(ii) **A** high birth rate,
falling death rate.
large base for growth,
birth rates still high,
difficult to reduce birth rate,
even though birth rate declining in some countries,
large rural population - less than 30% urbanised,
higher birth rates in rural areas,
reasons for high birth rate -
religious pressures,
tradition,
zeal for a son - inheritance,
expense of introducing family planning,
ignorance of large sectors of the population on need to reduce B.R/ low literacy rate / awareness,
difficulties of instituting family planning policies,
size of country / dispersed nature of population makes publicity about family planning difficult,
expense of introducing family planning policies,
lack of / unpopularity of abortion / sterilisation,
pressure in rural areas - need children to work on farms,
large number of children to look after parents in old age,

high infant mortality - hence large families.
reasons for falling death rate -
better medical facilities,
improved housing etc.

For **A** reserve 2 marks

B little difference between birth and death rate,
both are low,
in some countries death rate higher than birth rate.
reasons for low birth rate -
education / awareness of advantages of smaller families,
emancipation of women,
later marriages,
women pursuing careers,
contraception / family planning,
abortion.
n.b. in **B** do not accept reasons for low death rate as these are irrelevant in this question.

For **B** reserve 2 marks
For either **A** or **B** 4 at 1 mark
total for **(b) (ii)** 8 at 1 mark [8]

(c) slow growth / decline of population,
aging population,
increase in dependency ratio,
labour shortages / declining workforce,,
more spending -
pensions / retirement homes / medical expenses,
under-use of some resources - e.g. schools.
5 at 1 mark [5]

2 (a) (i) **X** dispersed,
Y nucleated,
Z linear.

3 at 1 mark [3]

(ii) **X** scattered / no pattern,
along roads,
hillsides,
Y concentrated around road junction,
a few scattered settlements,
nucleation in valley,
Z along roads,
especially E-W road & road to S,
below 60m / mostly below 30m.
For each 2 marks [6]

(iii) **X** even distribution of water / good soil,
infertile land - settlements need large area to support themselves.
Y accessibility,
meeting of routes from different directions.
Z accessibility / communications.
Reward reference to examples to illustrate e.g. linear settlements on river banks.

6 at 1 mark [6]

(b) (i) **morning traffic** - sharp decline in following introduction of charges,
decline by 1/4 / over 40000 to just over 10000,
increase since to over 20000,
but less than 1/2 1974 level,

evening traffic - peak fairly steady below 30000,
drop end of 1980s with introduction of charges,
n.b. traffic figures may be given but are **not** necessary.

4 at 1 mark [4]

(ii) staggered times for work / flexi-time,
decentralisation,
parts of town centre made traffic free,
limited parking,
expensive parking,
urban motorways,
road widening,
clearways on main roads,
tidal flows,
traffic lights controlling traffic from side streets,
ring roads,
large car parks on edge of city - park & ride,
rapid bus services - bus lanes,
improved public transport -
underground / monorail / rapid transit.
credit references to examples (cities) - 2 at 1 mark
i.e. maximum of 2 marks.

6 at 1 mark [6]

3 (a) (i) **scale**
extent of coastline 5km extent of lagoon 2km.,
Reserve and maximum 1 mark
orientation
NNE - SSW / NE - SW / N - S,
Reserve and maximum 1 mark
physical features
bar at **A**,
coastal lake / lagoon at **B**,
over 2 km.,
marsh at **C**,
headland / cliffs in south and north,
beach on bar,
streams flow into lagoon and marsh,
low lying,
gently sloping hills.
n.b. if the physical features named in the key to the map are repeated without any development i.e. streams, lakes, marsh, cliffs only award 1 mark for the list.
4 at 1 mark [6]

(ii) **A**
marine / coastal / wave deposition,
deposition offshore,
deposited material moved towards coast
by waves,
longshore drift,
n.b. if longshore drift is elaborated upon - award up to 2 marks maximum.
material from erosion along coast,
becomes a bay bar when material extends across a former bay,

B
coastal water cut off from sea,
some silting (marsh on photograph),

C
part of lagoon completely silted,
river deposition,
rivers seen on map.

Reserve for **each** of **A, B** & **C** 1 mark
extra marks for either **A, B** or **C** 3 at 1 mark [6]

(b) **(i)** line for 20 cms per sec. [2]

(ii) shaded area. [1]

(iii) **near concave / outer bank - ,**
faster flow,
deep water / greater volume,
river has more energy,
undercutting / erosion,
convex / inner bank -
slower flow,
shallow less volume,
less energy,
deposition.
use of figures from Fig. 6

max. 1 mark
5 at 1 mark [5]

(iv) erosion on outer / concave banks,
narrow neck,
straightening of river meander,
break through / straightening,
sealing of ends with deposition.
Credit text / annotated diagrams

5 at 1 mark [5]

4 (a) (i) **strong winds / tropical storms -**
build up over large sea areas,
seasonal distribution,
occur over wide area,
many rivers for flooding,
heavy rainfall / storms a regular occurrence,
global warming may bring heavier rainfall,
other natural hazards more localised,
e.g. volcanoes & earthquakes on plate margins.
only occur from time to time.

4 at 1 mark [4]

(ii) tsunamis, avalanches, cliff collapse, forest / bush fires,
permafrost, mudflows, blizzards.
n.b. NOT alternative wind names e.g. hurricane, tornado etc.

1 mark [1]

(b) (i) **features -**
thunderstorms / heavy rainfall,
dense clouds,
violent / strong winds / vortex,
high humidity,
calm in centre / eye,
features 2 at 1 mark
development -
air masses meet,
meet along inter-tropical front,
form over oceans,
warm moist lower layers - over 27¡ C
rising air cools,
moisture condenses,
latent heat released by condensation - storm rotates,
air blows inwards,
rises to great heights,
outward flow of air at upper level,

2 at 1 mark [4]

(ii) *physical reasons -*
high density of drainage,
extensive flood plains,
limited number of lakes for storage,
concentrated seasonal rainfall / monsoon rainfall,
storms / flash floods,
snow melt,
shallow / narrow channels,
lack of vegetation,
human reasons -
cutting down forest,
ploughing up & down slopes,
lack of investment - flood control.

5 at 1 mark [5]

(c) **tropical storms -**
forecasting -
arrival,
possible strength,
course,
store loose objects,

tape up / board windows,

river flooding -
build check dams,
plant trees,
dredging,
embank channel,
flood relief channels,
river straightening,

for either -
move from low lying areas,
move from area evacuation,
store food,
drinking water,
stay indoors,
listen to radio / TV.
tropical storms / floods 6 at 1 mark [6]

(d) huge costs,
developing countries such as Mozambique poor,
scale involved,
climate unpredictable,
loss of life,
destruction of settlements,
agricultural land / crops destroyed,
communications destroyed / interrupted,
long time to recover,
limited planning to deal with the problem.
5 at 1 mark [5]

5 (a) areas of greatest demand - short of oil,
industrial countries -
USA, Europe, Japan,
great amounts of oil demanded,
some producing areas have large surplus -
M. East, especially Saudi Arabia,
little industrial development,
large surplus,
demand for special oils e.g. Nigeria - USA ,
oil is very transportable - tankers / pipelines.
6 at 1 mark [6]

(ii) great amount still produced,
large oil reserves,
large scale production,
most world economies now based upon oil,
demand for transport uses - little alternative,
use for production of electricity,
coal declined,
oil less polluting than coal,
more efficient than coal,
new energy sources cannot produce enough energy for world demand.
6 at 1 mark [6]

(b) (i) **n.b.** Question states Ôproblems such asÕ
candidates may refer to **other** problems not referred to in Fig. 11.
e.g. global warming,
acid rain,
problem may affetc a number of countries,
nuclear plant in France could affect many countries,
Brazil oil leak could affect Argentina,
nuclear accidents very dangerous,
radiation,
effects may last a long time,
serious effects on environment,
more concern now for environmental protection,
accidents expensive / difficult to deal with,
Brazil example - effects on river quality, agriculture, tourism.
6 at 1 mark [6]

(ii) **increasing energy production** -
raising standard of living,
increased industrialisation,
especially in developing countries,
increased population,
energy for transport,
protecting the environment -
need to control use of fossil fuels,
use of filters in chimneys,
control pollution - legislation,
alternative energy sources - less polluting.
7 at 1 mark [7]

6 (a) (i) increase of temperature,
build-up of gases e.g. CO2 in atmosphere,
prevent loss of out going radiation / infra red radiation.
2 at 1 mark [2]

(ii) more CO2 production 1860-2000,
steep rise in CO2 & temperature 1900-1940,
later fluctuations,
further rise 1970s - 2000.
n.b. trends expected, dates **not** essential.
3 at 1 mark [3]

(iii) CO2 build-up - main cause,
most produced by USA - small % of worldÕs population,
almost 1/2 produced by USA & Europe,
Europe, former USSR & Japan major producers -
industrial regions,
less produced by developing countries,
e.g. India large % worldÕs population - small CO2 production,
5 at 1 mark [5]

(b) (i) damage to major cities of the world,
residential / industrial / port areas / communications,
loss of land - islands,
evacuation of large numbers of people,
loss of life,
islands - damage to agricultural land,
lack of drinking water.
4 at 1 mark [4]

(ii) reduce burning of fossil fuels,
pollution control,
control emissions from transport,
control deforestation -
trees absorb CO2,
burning vegetation adds CO2 to atmosphere.
plant trees,
develop alternative energy sources,
international controls.
5 at 1 mark [5]

(iii) cost,
reluctance by some to recognise the problem,
difficult to reduce road transport,
industry needs to continue to expand,
few alternatives to fossil fuels,
international conferences e.g. Kyoto / Johannesburg produce
agreements but
intentions not always followed through,
forest clearance difficult to control,
6 at 1 mark [6]