1 (a) (i) steep rise in population up to 1999,
constant/steady growth,
almost trebled 1950-99,
varied estimates over the next 50 years,
high estimate will almost double again,
low estimate will level out at about 7 billions from 2020.

<u>3 at 1 mark</u> **[3]**

(ii) **X** birth rate well above death rate,
continues to grow rapidly.
Y as above but then reduction in growth,
increased death rate/declining birth rate.

<u>2 at 1 mark</u> **[2]**

(iii) **Z** birth rate above death rate,
then decline - lowering of birth rate,
reasons for low birth rate.

<u>2 at 1 mark</u> **[2]**

(b) (i) **A** reduction in birth rate –
birth control/contraceptives,
abortion,
sterilisation,
education about family planning/awareness/advertisements,
reward examples e.g.
China's one-child policy,
salary bonus - 10%,
priority in education/health facilities/employment/housing,
fines - 2nd child/annual tax, MAX <u>1 mark</u> details - one child policy,
death rate higher than birth rate in some countries,
emancipation of women etc.
fall in birth rate - ageing population.
credit references made to rise in birth rate also.

B fall in death rate –
better medical facilities,
more food,
improved diets less malnutrition,
housing improvements,
more spending on older people,
education/awareness of need to look after the body/exercise etc.
increase in death rate in some countries -
aids etc.,

For each of **A** and **B**   <u>Reserve 3 + 3 marks</u>
Additional mark for either   <u>1 mark</u> **[7]**

(ii) overpopulation,
increase in dependency ratio,
pressure on services - electricity/gas/sanitation etc.,
lowering of living standards,
poverty,
greater demand on resources,
high levels of unemployment,
famine/food shortages,
malnutrition,
decline of infrastructure - e.g. roads,
inadequate housing/squatters,
shortages - water/land,
exhaustion of soil,
lowering of educational facilities,
lack of health facilities,
possible civil unrest etc.

<u>5 at 1 mark</u>   [5]

(c) broad/wide based pyramid - progressive,
large percentage below 15 years,
small population over 65,
0-4 narrower than 5-9,
reference to shape,
high dependency ratio.

<u>Reserve 2 marks</u>

high birth rate,
low life expectancy/high death rate,
lowering of birth rate.

<u>Reserve 2 marks</u>

MAX reference to reasons for high BR and high DR   <u>1 mark</u>
additional marks   <u>2 marks</u>   [6]

2 (a) (i) **A** large area,
spacious layout/large car parking area,
away from congestion,
possibly room to expand,
possibly cheaper land,
near road junction - outer ring road and road from CBD,
proximity to large residential area.

<u>4 at 1 mark</u>   [4]

B junction of roads,
in large residential area,
away from CBD.

<u>3 at 1 mark</u>   [3]

(ii) more local stores - convenience goods,
small sphere of influence/low threshold,
fewer district shopping centres - competition,
need larger threshold,
most of local shops - in older residential areas.

<u>3 at 1 mark</u>   [3]

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(iii) Area **Z** older,
grid-iron/rectangular layout,
less planning.

<div align="right">2 at 1 mark   [2]</div>

(b) description/location   <u>Reserve 1 mark</u>
reasons   <u>Reserve 2 marks</u>
additional mark   <u>1 mark</u>
For each choice   4 + 4 marks   [4]

(c) to prevent urban sprawl,
protect agricultural land,
provide open space around town/city - recreation,
prevent joining up of neighbouring towns/cities,
formation of conurbations,
credit reference made to measures such as green belts,
towns/cities in developing countries - prevent development of
squatter settlements.
no credit for examples.

<div align="right">5 at 1 mark   [5]</div>

3 (a) (i) description of –
suspension,
solution,
saltation,
traction load.
2 names only without description   1 mark
<div align="right">4 at 1 mark   [4]</div>

(ii) loss of energy,
insufficient water/small volume,
especially during dry season,
shallowing of channel/braiding,
inner/convex bank of meander,
river enters still water of lake/sea,
decrease in velocity,
lessening of gradient –
below waterfall.
river carries more load than it can transport,

<div align="right">4 at 1 mark   [4]</div>

(b) (i) waterfall - resistant rock/cap rock,
level topped,
high,
river splits over waterfall,
river shallow above waterfall,
deposition above the waterfall/islands with vegetation,
turbulence,
rapids,
gorge/very steep sides/cliff,
gorge meanders,
deposited rock fragments - side of gorge,
gullies.

<div align="right">6 at 1 mark   [6]</div>

(ii) interruption of river transport - waterfall,
problem of bridging the gorge,
road bridge carrying main road from settlement of Victoria Falls,
tourism - hotels,
employment,
contributed to growth of settlement,
hydro-electric power.

<u>5 at 1 mark</u>　　[5]

(c) resistant cap rock,
underlying softer rock eroded,
eddying/plunge pool,
undercutting,
erosopnal processes MAX <u>1 mark</u>
by splashback,
unsupported,
collapse,
retreat leaving gorge.

<u>6 at 1 mark</u>　　[6]

4 (a) (i) high temperatures all year/every month 20° C - 30° C,
low annual range 6° C,
highest temperature - April 29° C,
high annual rainfall,
highest Dec. 270-280 mm,
lowest rainfall Feb, May and Sept. about 180 mm,
no dry season.

<u>4 at 1 mark</u>　　[4]

(ii) emergents 40-45m,
canopy layer 30m +,
crowns interlock,
lianas,
epiphytes attached to branches/trunks,
tall trees,
straight trunks,
first storey 15-20m,
bark smooth,
little leaf litter/undergrowth,
trees close together,
buttress roots,
ferns, herbs and low growing plants, fungi,
trees have broad leaves,
drip tips,
waxy/leathery leaves,
shallow roots,
evergreen forest.

<u>5 at 1 mark</u>　　[5]

(iii) tall trees compete for sunlight,
little undergrowth - lack of sunlight,
heavy rainfall/high temperatures - prolific growth,
evergreen - no seasonal rhythm,
drip tips/waxy leaves/allow water to flow off quickly,
shallow roots - high rainfall - water in top layer of soil.

<u>4 at 1 mark</u>　　[4]

(b) **(i)** **A** loss of forest,
14% Amazonia last 10 years, usable timber trees gone,
empty fields,
pasture overgrown,
decline in cattle rearing,
farming unprofitable.

<u>3 at 1 mark</u> [3]

B less interception,
more percolation,
increases flow into rivers by throughflow,
increased run-off,
rivers - more volume – flooding,
nutrient cycle broken/interrupted,
no roots to absorb nutrients from soil,
no replacement of nutrients with leaf fall and decay,
loss of nutrients to soil,
leaching by heavy rainfall,
higher rate of surface run-off with loss of nutrients,
loss of species,
animals die - loss of habitats, may become extinct,
burning - contributes to global warming.

<u>4 at 1 mark</u> [4]

(ii) **n.b.** other natural environments acceptable as well as tropical rain
forest.
with economic developments becoming less,
preserve the ecosystem,
prevent loss of species - plant and animal,
tourist potential,
control problems -
flooding,
soil erosion,
desertification,
global warming etc.

<u>5 at 1 mark</u> [5]

5 (a) **Y** greater dependence upon agriculture,
X developed countries, **Y** developing countries,
agriculture in **X** more mechanised,
X developed manufacturing C19-C20, **Y** developing manufacturing,
X more developed economies - greater demand for services,
X greater amount of skill/educated/trained labour force,
X more capital for investments.

<u>5 at 1 mark</u> [5]

(b)　　　　**labour** - large labour force required,
assembly line,
skilled/semi-skilled,
components - large number,
central location - assembling from many subsidiary factories,
raw materials - availability of sheet steel etc,
siting factors - large area –
large factory, storage, parking,
level land,
capital - large-scale production,
factory,
purchase/storage large quantities of components/raw materials,
large labour force – salaries,
transport -
bringing components,
vehicles - markets,
assembling of large number of workers,
markets -
home/regional,
export details.
named location   <u>1 mark</u>
for each of 4+ factors   <u>9 at 1 mark</u>   [10]

(c)　　　　credit crop names/locations if given, RES and MAX <u>1 mark</u>
for each of natural inputs, human inputs, outputs/markets,
processes, capital.   <u>Reserve 2 + 2 + 2 marks</u>
crops/outputs   <u>MAX 3 marks</u>   [10]

6 (a) (i)　　cost,
concerns over safety/radio-activity,
difficulty of storing/disposing of nuclear waste,
nuclear power stations take a long time to build,
expensive to dismantle,
limited life of power stations,
competition with renewables.
                                                                         <u>4 at 1 mark</u>   [4]

(ii)　　decline in reserves,
competition with oil/natural gas,
competition with alternative sources of energy,
high cost,
pollution - if developed up to <u>2 marks.</u>
                                                                         <u>5 at 1 mark</u>   [5]

(iii)　　renewable,
little pollution,
lower running costs,
improved technology,
security of supply - countries do not rely on others,
some units small scale serve local areas - cut down on
transport costs,
short construction times,
countries may cut down on costly oil imports.
                                                                         <u>4 at 1 mark</u>   [4]

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(b) **(i)** named natural area 1 mark
natural attractions 3 at 1 mark
other reasons e.g. accessibility MAX 2 marks [4]

(ii) help control: loss of natural landscape, natural attractions of area,
up to 2 marks
prevent over-development of infrastructure - roads, airports, hotels
etc., up to 2 marks
cut loss of natural habitats,
check pollution up to 2 marks
general benefits e.g. employment MAX 2 marks
4 at 1 mark [4]

(iii) publicity,
education/awareness,
planning control,
develop nature tours,
encourage activities which are compatible with nature –
bird watching, jungle trekking, rafting etc.
establish national parks/forest parks etc.
4 at 1 mark [4]