

Question	Answer	Marks
4(a)(i)	high / medium;	1
4(a)(ii)	<i>any two of:</i> houses close together / people in close proximity; lack of clean water supplies; lack of sanitation / sewage disposal;	2
4(b)	<i>any four of:</i> better / good, education / schools; better health care / more, hospitals / clinics / doctors; better standard of living; better entertainment / 'bright lights'; better food supplies; electricity; better water supply / sanitation;	4
4(c)	<i>any three of:</i> the settlement grows very quickly / migrants continue to move in; provision of services is expensive; the city has limited funds available; the city does not always own the land; settlement sites are difficult areas to get services to; difficulty of relocating people;	3

Question	Answer	Marks
4(a)(i)	4–4.1 million;	1
4(a)(ii)	20;	1
4(a)(iii)	the birth rate was increasing rapidly / the population was growing rapidly / many females of child-bearing age;	1
4(b)	<i>any four of:</i> one / two-child policies; financial deterrents / incentives to limit the number of children; family planning / birth control clinics / programmes; free / cheap / available, contraception; media advertising / information or awareness programmes / education on family size; providing education for females; encouraging females to have careers; making abortion / sterilisation available; encouraging later marriage;	4
4(c)	<i>max two of:</i> better health care / more doctors; better diets; better sanitation / water supply; <i>plus any of, up to max three:</i> high numbers at present in the 20+ age group; (leading to) lower death rate/higher life expectancy;	3

Question	Answer	Marks
4(a)(i)	bar correctly plotted at 8 500 000;	1
4(a)(ii)	4 200 000 / 4.2 million;	1
4(a)(iii)	30%;	1

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Question	Answer	Marks
4(b)(i)	<i>any three from:</i> lack of jobs; lack of education; few professional occupations / well-paid jobs; low crop yield because, drought / floods / cyclones / poor farming practices; no surplus for sale / no income / low income; malnutrition / illness, reduces capacity to work, which reduces crop yield; population pressure forces use of poorer quality land; cannot afford fertilisers / soil exhaustion / soil erosion; large size of families / many children to support / lack of family planning; greater investment in urban areas;	3
4(b)(ii)	<i>any four from:</i> set up factories / plantations / forests etc., to provide work; irrigation schemes; cooperative schemes help to purchase, seeds / fertiliser etc; help with marketing; provide education; improve water supplies / sanitation; provide electricity; improve roads; more, medical centres / clinics / doctors / nurses / family planning clinics / advice; teach craft making; community participation in improvement schemes;	4

Question	Answer	Marks
5(a)(i)	divisions correct (e.g. division at 13 and 67) ;; correct shading;	3
5(a)(ii)	<i>any two from:</i> high cost of care for elderly; low percentage of population under 15 years so lack of workforce in future; so output declines; so these few have to face high cost of care of large elderly population; strain on economic resources, e.g. pensions; strain on, health care / social care; high dependency ratio;	2
5(a)(iii)	<i>any two from:</i> large number in child bearing age / high birth rate; many under 15 who will soon be of child bearing age; many in 15–59 group will increase 60 years and over population;	2
5(a)(iv)	<i>any two from:</i> insufficient schools / lack of money for schools; insufficient, health services / hospitals; job shortage / high unemployment; difficult to feed large population; difficult to provide (clean) water for large population; shortage of housing; shortage of infrastructure; deforestation; poverty;	2
5(a)(v)	<i>any two from:</i> education on, family planning / contraception; promotion / increasing availability of, contraceptives; educating women for employment so that they have children later; national population policies / antinatalist policies / raising age of marriage;	2

Question	Answer	Marks
5(b)	<i>opinion based on any four evidence:</i> <i>not sustainable:</i> will need to clear more land for farming; increase water taken from, rivers / ground water / need for irrigation; increase use of, insecticides / herbicides; increase use of artificial fertilisers; need, money / investment; need <u>skilled</u> workers; need for imports; <i>sustainable:</i> biological controls to reduce pests; organic fertilisers / manure, to increase yields; crop rotation to maintain fertility; rainwater harvesting; trickle-drip irrigation / other named improved irrigation technique (e.g. clay pot irrigation); large working population;	4

Question	Answer	Marks
1(a)	<i>allow answer within range 31–33;</i>	1
1(b)	<i>country China</i> AND <i>percentage of greenhouse gas emissions allow answer within range 21–25;</i>	1
1(c)	<i>any two from:</i> water vapour; carbon dioxide; methane; oxides of nitrogen; CFCs / HCFCs; ozone;	2
1(d)	<i>any three from:</i> (many) people are poor / poor country / LEDC / developing country; vehicle ownership low / use public transport; electricity not available for many; less ownership of energy-using equipment, e.g. TVs, central heating; limited industry / not as technologically advanced;	3

Question	Answer	Marks
4(a)(i)	allow answer within range 4.7–5.1 billion;	1
4(a)(ii)	slows / levels off;	1
4(a)(iii)	any two from: the future can't be certain / hard to predict; birth rates / death rates, may change; catastrophic event may occur, e.g. pandemic / war; population policies / example of; medical advances;	2
4(b)(i)	Asia (<i>largest</i>) Africa South America Europe North America Oceania (<i>smallest</i>) ;; 6 correct [2] 4–5 in correct order [1]	2
4(b)(ii)	Europe;	1
4(b)(iii)	82 ;; (if answer incorrect allow one mark for, 71–39 or 32 [1]);	2

Question	Answer	Marks
4(b)(iv)	any four from: high birth rate; lack of education for women; lack of contraception / knowledge of contraception; due to, tradition / religion; pronatalist government policies; migration / immigration; falling / low, death rates; due to better sanitation; due to improved health care; due to improved diet;	4
4(b)(v)	any two from: war / conflict; famine / drought / natural disaster; economic / employment; lifestyle choice / quality of life; family;	2

Question	Answer	Marks
9(a)(i)	<i>any three from:</i> increase in population of 1.5% or more in north (east); population growth to the east of the country; population decline in most areas of the country; Tasmania / island to south, has small increase or increase <0.5%; most of population increase is around the coast; central region (of Australia) is area of population decrease;	3
9(a)(ii)	<i>any two from:</i> increased urbanisation; migration / immigration; many areas do not have employment opportunities; better climate at the coast; older population (means fewer births) in many areas / ageing population; drought / crop failure / wild fires / desertification;	2

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Question	Answer	Marks
9(b)	<i>any three from:</i> migration / immigration, controls; public education / family planning; educating women (so women have, careers / children later); birth control programmes / availability of contraceptives; pronatalist or antinatalist policy / encouraging or penalising certain family sizes; example of a named policy in a specific country; raising the age for marriage; improved healthcare;	3
9(c)	<i>Level of response marked question:</i> Level 3 [5–6 marks] A descriptive response, well-argued, covering and linking both sides of the debate. Response must provide a conclusion. Response will include specific examples or development to support the statements made. Factually accurate and well laid out. Level 2 [3–4 marks] A well-argued response but containing broad descriptions and lacking the support of relevant examples or development. The links between the economy and the environment may not be clear within the response. Or A one-sided response covered in depth and supported with relevant examples to support the statements made. Typically factually correct but may contain some errors or vague detail. Level 1 [1–2 marks] The response may be lacking in depth, or may be in the form of a list. Some information may be inaccurate. The response may describe generalisations and lack technical language. No response or no creditable response [0]. <i>Level of response indicative content:</i> Candidates may agree or disagree that a growing population is good for the environment and also agree or disagree that it is good for the economy of a country.	6

Question	Answer	Marks
9(c)	<p><i>economic content:</i> Candidates may cover the strain on the economy caused by an increase in birth rate and how this is a drain on resources due to less women at work, and the increased requirement for medical care and the need for schools and other resources. Candidates may also cover the decrease in death rate / people living longer and what this means for the economy in terms of an increased need for medical care, the need for pensions and (proportionally) less people in work. However, more young people will eventually enter the workplace to increase the working population and increase the economic potential for the country. Also, some candidates will cover immigration and migration of the working population.</p> <p><i>environmental content:</i> Candidates may cover the need for space for a growing population, for residential or industrial buildings, and discuss deforestation, habitat destruction and the effects on food chains, food webs and biodiversity. Candidates may also cover the increased need for food, and the idea of more land for agriculture and monoculture as well as land for livestock. Candidates may consider the increased need for transport, infrastructure, electricity and amenities and talk about increased waste, sewage, atmospheric pollution and other issues. Some candidates may consider the things that can be done to counteract the negative effects of a growing population, for example more efficient use of resources, recycling, and alternative energy resources.</p>	

Question	Answer		Marks
2(a)	part	name of part	3
	A	lag phase	
	B	exponential / log, phase	
	C	stationary phase / stable phase	
	D	carrying capacity	
	all 4 correct [3] 2–3 correct [2] 1 correct [1]		

Question	Answer	Marks
2(b)	<p>any two from: (freely available) contraception / birth control programmes; improvements to women's education (so women have, careers / children later); awareness programmes / family planning; tax incentives / legislation / national policies / example of a named policy in a specific country; raising the age for marriage; improved healthcare;</p>	2

Question	Answer	Marks
8(a)(i)	three points correctly plotted; completion of line to join;	2
8(a)(ii)	growth from 1890 to 1990; decline from 1990 to 2015;	2
8(b)	A;	1
8(c)	<p><i>Level of response marked question:</i></p> <p>Level 3 [5–6 marks] A coherent response is given that develops and supports the candidate's conclusion using relevant details and examples. Indicative content and subject-specific vocabulary are generally used precisely and accurately. Good responses are likely to present a balanced evaluation of the statement.</p> <p>Level 2 [3–4 marks] Development and support of the conclusion is evident, though the response may lack some coherence and/or detail. Indicative content and subject-specific vocabulary are used but may lack some precision and/or accuracy. Irrelevant detail may be present. Responses contain evaluation of the statement, but this may not be balanced.</p> <p>Level 1 [1–2 marks] The response may be limited in development and/or support. Contradictions and/or irrelevant detail may be present. Indicative content and subject-specific vocabulary may be limited or absent. Responses may lack structure or be in the form of a list. Evaluation may be limited or absent.</p> <p>No response or no creditable response [0 marks]</p>	6

Question	Answer	Marks
8(c)	<p><i>Indicative content for:</i> 'Improved health and education are the best ways to manage the population size of a country'</p> <p><i>agree:</i> improved healthcare reduces infant mortality therefore more children likely to survive so parents have fewer children better education provides information and options regarding family planning improved education for women means more job opportunities and children at an older age better jobs mean less need for children to provide income may take more than one generation for the effects of better healthcare to be seen</p> <p><i>do not agree:</i> government can supply incentives to support population development, e.g. raise the age of marriage, antinatalist and pronatalist policies, sterilisation, immigration and migration etc. availability of family planning methods affects use cultural and religious views impact on family size increased immigration due to better healthcare and education (description of other ways as better)</p>	

Question	Answer	Marks
3(a)	exponential / log (phase) ;	1
3(b)	<i>any three from:</i> increasing / introducing, availability of, family planning / contraception; providing / improving, education on family planning; increasing, career / job / higher education, opportunities for women; encouraging, marriage / children, later in life; improving accessibility to childcare; improving provision of health care; introducing / using, pronatalist / antinatalist, policies; AVP;	3

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Question	Answer	Marks
1(a)	40–44;	1
1(b)	<i>any three from:</i> largest female group 65–69; large number of middle-aged people / wide in the middle; few young dependants / many elderly dependants; many economically active people; some people live to, old age / 100+; similar shape for both genders up to 65; more females than males above 65; correct use of comparative data;	3
1(c)	<i>any three from:</i> lack of food / starvation; natural disaster / climate change; war / conflict; poverty / low standard of living; religious / ethnic, persecution; better job opportunities elsewhere; better health / medical facilities elsewhere; better education opportunities elsewhere; family ties;	3

Question	Answer	Marks
4(a)	<i>any two from:</i> large population and limited land; economic; employment; safer; better access to medical facilities / education; better infrastructure; AVP;	2

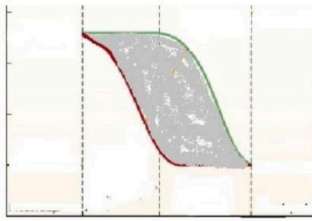
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Question	Answer	Marks
4(b)	<i>any two from:</i> availability of contraception; access to health care; improved education on family planning; education of women / careers; examples of pronatalist or antinatalist policies, e.g. taxation / legislation ;	2

Question	Answer	Marks
4(a)	<i>any two from:</i> life expectancy highest in north coast countries / North of Tropic of Cancer; lowest between Tropic of Cancer and Equator; majority of countries 60–70; AVP;	2
4(b)	<i>any two from:</i> <i>increase due to:</i> improved healthcare / medicine; improved food / food supply; improved water supply / sanitation; <i>decrease due to:</i> disease / epidemic; famine; war; climate change / climate hazards; air pollution;	2

Question	Answer	Marks
7(a)(i)	36 (per 1000 population);	1
7(a)(ii)	shading of sections 2 and 3 OR as shown; 	1
7(a)(iii)	X drawn on the graph in the fourth section;	1
7(b)	any two from: improved health services, e.g. vaccinations, availability of doctors, medicine; improved nutrition; improved sanitation / potable water supply / housing; lack of wars / peace; improved standard of living;	2
7(c)	any three from: tax incentives; free schooling; other incentives, e.g. free housing; government promotion / public information / advertising; banning abortion / contraception;	3

Question	Answer	Marks
7(d)	any four from: greater proportion of dependants; increased need for medical care; more of the working population needs to be carers; reduced numbers of people in work; increased burden on country for pensions; reduction to GDP / economy; reduced money for other services (for young people);	4

Question	Answer	Marks
4(a)(i)	<p><i>any three from:</i> data only given for, one year / 2019; lack of historic data to compare; data does not indicate whether the figures are an increase / single year doesn't show a trend; some natural disasters are not caused by climate change; AVP, e.g. loss of homes might (also) be due to other reasons rather than natural disasters, article not (necessarily) written by scientists;</p>	3

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Question	Answer	Marks
4(a)(ii)	<p><i>any two from:</i> lack of rain; (prolonged) high pressure; effect of, El Nino Southern Oscillation / La Nina, (on ocean temperatures and evaporation); effect of climate change; deforestation; change in the water cycle;</p>	2
4(a)(iii)	<p><i>any two from:</i> (lack of rain causes) plant death; reduced number of roots to hold soil; lack of vegetation to slow wind speed; lighter soil blown by wind; bare soil easily washed away when rain eventually falls;</p>	2
4(b)	<p><i>any three from:</i> overcrowded / unplanned, emergency accommodation; lack of clean water; lack of sanitation; poor diet; less access to medical facilities; lack of shelter / exposure to weather; AVP;</p>	3

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Question	Answer	Marks
5(a)	<p><i>Four from:</i> lowest growth rate north of Tropic of Cancer / south of Tropic of Capricorn / in Europe / North Asia; greatest rates south of the Tropic of Cancer / in Africa / between the tropics; comparison within a continent; 1000+ % in West Asia / Middle East / North West Africa / North East, South America; reference to specific growth rates;; negative growth in two countries;</p>	4
5(b)	<p><i>Three from:</i> <i>Impact:</i> greater demand for natural resources which reduces the availability of resources;</p> <p><i>Reasons:</i> shortage of water due to industrial / domestic use / pollution; shortage of food causes soil erosion / soil exhaustion; increased deforestation / land use due to increase demand for land for agriculture / housing / industry; shortage / increased demand for energy due to increase use of fuel resources / power;</p>	3
5(c)(i)	<p>financial incentive; awards; named example;</p>	1
5(c)(ii)	<p>increase financial burden on services / named example;</p>	1