



ANDERSON JUNIOR COLLEGE

JC2 H1 Geography Preliminary Examinations (2018)

H1 GEOGRAPHY

8813/01

Paper 1

12 September 2018

3 hrs

Additional Materials: Writing Paper
1 Insert
1 World map outline

READ THESE INSTRUCTIONS FIRST

1. Write your name and class in the spaces provided below, and on the work you hand in.
2. Write in dark blue or black pen on both sides of the paper.
3. You may use an HB pencil for any diagrams or graphs.
4. Do not use staples, paper clips, glue or correction fluid.

Answer **four** questions in total.

Section A

Answer Question 1.

Section B

Answer Question 2.

Section C

Answer **two** questions, each from a different theme.

The Insert contains all the Resources referred to in the questions.

You should make reference to appropriate examples studied in the field or the classroom, even where such examples are not specifically requested by the question.

Diagrams and sketch maps should be drawn whenever they serve to illustrate an answer.

You are reminded of the need for good English and clear presentation in your answers.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

Name: _____ PDG: _____

Section A	Section B	Section C (Please <u>circle</u> the number of the attempted question)		Total Marks
1	2	3 / 4	5 / 6	
25	25	25	25	100

This question paper consists of 5 printed pages.

[Turn Over]

Section A

Theme 3: Geographical Investigation

- 1 A class of 25 18-year old students were tasked to investigate the influence of land use on infiltration rates in Singapore. After splitting into groups of 5, one of the groups selected Labrador Nature Reserve as their study area, and decided to carry out their primary fieldwork at two sites – Sites A and B – in the nature reserve.

The group crafted the following hypothesis for their investigation:

“The higher the level of urbanisation of the site, the lower the infiltration rate in the site.”

The following equipment were provided to measure infiltration rate at the two different land use sites:

- A tin can, about 30cm in height and a diameter of 10cm, with both ends removed
- A 1.5-litre bottle of water
- A ruler
- Hammer
- Wooden plank
- Stopwatch

The investigation was conducted on a weekday afternoon in June. They were given 3 hours to complete their investigation, from 2 pm to 5 pm. At the respective sites, the tin can was driven into the soil to about 10cm deep by using a hammer onto a wooden plank placed on the rim of the can. A ruler was placed vertically inside the tin can to record the fall in water level. Water was poured to a depth of 20 cm. Measurements of the remaining depth of water was taken every 1 minute to compute the infiltration rate. At the same time, constant top-ups of water were carried out to maintain a regular head of water above soil.

Resource 1 shows a map of Labrador Nature Reserve, which indicates the locations of Sites A and B. Resource 2 shows data collected on infiltration rates at Sites A and B.

- (a) Explain why the hypothesis crafted by the group is not suitable for the investigation at Labrador Nature Reserve. [2]
- (b) Explain how the impacts of the investigation could be minimised. [5]
- (c) With reference to Resource 2, sketch a line graph to represent the infiltration rates for Site A and Site B over time respectively. Suggest **one** reason why this method may be better than the one depicted in Resource 2. [6]
- (d) With reference to Resources 1 and 2, account for the differences in infiltration rates between Sites A and B. [5]
- (e) Evaluate the usefulness of the investigation in understanding the influence of land use on infiltration rates, and suggest how the investigation could be improved. [7]

Section B**Theme 2: Urban Change****Urban Liveability in Ahmedabad, India**

- 2** Ahmedabad, the formal capital of the Indian state of Gujarat, is one of the most populous cities in the country as of 2011. It also houses a key urban reimagining project implemented along the Sabarmati River, an important source of water for the city.

Resource 3 shows the trends in slum population in various states in India from 2001 to 2011. Resource 4 shows the distribution of informal settlements in Ahmedabad. Resource 5 shows the main features of urban reimagining of the Sabarmati River in Ahmedabad. Resource 6 is an extract on impacts of urban reimagining of the Sabarmati Riverfront in Ahmedabad.

- (a) Compare the trends in slum population between Gujarat and Delhi from 2001 to 2011 with reference to Resource 3. [4]
- (b) Describe the distribution of the range of informal settlements in Ahmedabad in 2001 using Resource 4. [4]
- (c) With reference to Resource 4, suggest reasons for the distribution of the range of informal settlements in Ahmedabad in 2001. [5]
- (d) With reference to Resource 5, explain **two** ways in which urban reimagining of the Sabarmati Riverfront might have helped enhance urban liveability in the area. [4]
- (e) Using Resources 5 and 6 and your own knowledge, evaluate the extent to which urban reimagining along Sabarmati Riverfront has improved the lives of slum dwellers in Ahmedabad. [8]

Section C

Answer **two** questions from this section.

Either Question 3 **or** Question 4, and **Either** Question 5 **or** Question 6

Theme 1: Climate Change and Flooding

- 3 (a) Explain the processes underlying contemporary climate change. [9]
- (b) To what extent do you agree that there are economic, environmental and social dilemmas in mitigating and adapting to contemporary climate change? [16]
- 4 (a) Explain how flood hydrographs vary in the tropics. [9]
- (b) "Flooding hazards are largely due to forces beyond the control of men."
To what extent do you agree with this view? [16]

Theme 2: Urban Change

- 5 (a) Explain why traffic congestion occurs in cities of countries at varying levels of development. [9]
- (b) Assess the success of strategies to manage traffic congestion in cities of countries at varying levels of development. [16]
- 6 (a) Explain why urban trends in cities at different levels of development vary. [9]
- (b) "Cities should be planned for people, not places."
To what extent do you agree with this view in relation to the effectiveness of strategies to improve liveability in cities? [16]



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This question paper consists of 6 printed pages.

[Turn Over]

Resource 1 for Question 1

Map of Labrador Nature Reserve, including the locations of Sites A and B



Resource 2 for Question 1**Data collected on infiltration rates from Site A**

Time	Infiltration rate (mm/min)
1 min	10
2 mins	9
3 mins	7
4 mins	4
5 mins	1

Data collected on infiltration rates from Site B

Time	Infiltration rate (mm/min)
1 min	15
2 mins	12
3 mins	10
4 mins	8
5 mins	7

Resource 3 for Question 2

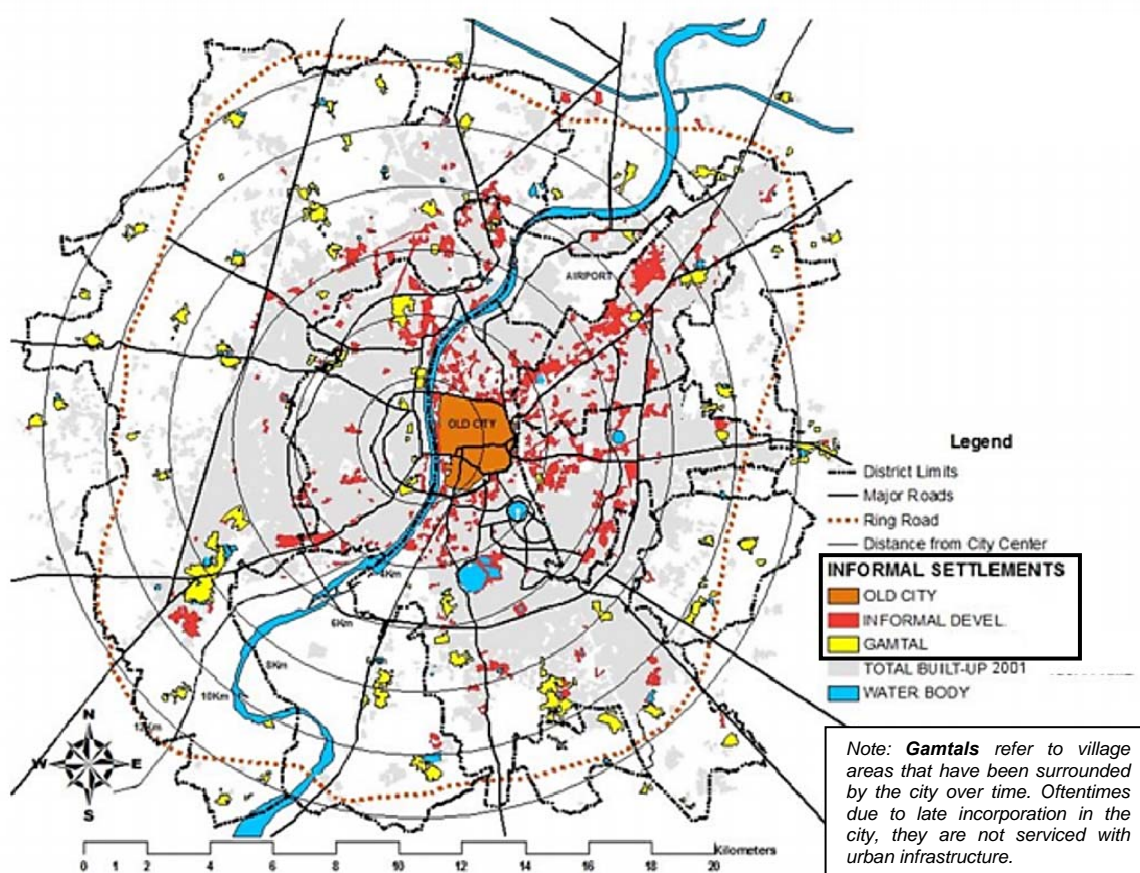
Slum Population in Selected States in India

State	Slum Population		Total Population	
	2001	2011	2001	2011
Andhra Pradesh	5,149,272	10,186,934	15,752,946	84,580,777
Delhi	2,025,890	1,785,390	10,979,341	16,787,941
Gujarat	1,346,709	1,680,095	11,427,259	60,439,692
Jharkhand	309,557	372,999	2,418,755	32,988,134
Maharashtra	10,644,605	11,848,423	33,624,960	112,374,333

Statistics from: <https://web.archive.org/web/20061206212031/http://www.censusindia.net:80/results/slum1.html>;
<https://www.census2011.co.in/>

Resource 4 for Question 2

Distribution of informal settlements in Ahmedabad, India



Source: <https://openknowledge.worldbank.org/bitstream/handle/10986/16384/wps6267.pdf?sequence=1>

Resource 5 for Question 2

Reimaging of the Sabarmati Riverfront in Ahmedabad, India



Source:

http://epaperbeta.timesofindia.com/NasData/Publications/TheTimesOfIndia/Mumbai/2017/09/22/Photographs/018/22_09_2017_018_026_011.jpg

Resource 6 for Question 2**Article on impacts of urban reimagining of the Sabarmati Riverfront in Ahmedabad**

Once a bleak riverbed that was dry most of the year, the Sabarmati that winds through central Ahmedabad is now a swelling and much cleaner waterway, fed by canals and barrages from an upstream river. Previously, the old river was clogged with sewage and the tin-roofed shanties clustered along the banks blocked access for the general public. Now, an interceptor sewer system, part of the \$200-million Sabarmati project, has been constructed on both the banks of the river to intercept the sewer running into the river and divert it to treatment plants.

Backers of the project boast that the rejuvenation of the Sabarmati riverfront has made it a center of civic life, just as it was a century ago. A key feature of this project is a two-level, continuous promenade on both sides of the river, built just above the water level to serve only pedestrians and cyclists and to provide access to the water. The whole stretch of river banks is public, open to every citizen.

But overhauling the Sabarmati required one of the largest urban resettlement programs undertaken in India. Tens of thousands of poor riverfront families were given space in government-built apartment blocks, but most were located on the outer reaches of the city, all but disconnected from transit networks, utilities and people's former livelihoods, the families said. Some of the buildings were unfinished or lacked potable water.

Also, not all slum dwellers were resettled. For thousands other impoverished slum dwellers, they and their families are stuck in a temporary housing site, living in tumbledown shacks made of plywood and plastic sheets that fall apart during the heavy summer rains, miles from city services or decent jobs.

Adapted from:

- <http://sabarmatiriverfront.com/UserFiles/File/INCLUSIVE%20GROWTH.pdf>
- <https://economictimes.indiatimes.com/news/politics-and-nation/poor-excluded-in-ahmedabads-urban-development-model-study/articleshow/47582007.cms>
- <http://www.latimes.com/world/asia/la-fg-india-river-20140803-story.html>

Section A

Theme 3: Geographical Investigation

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The group crafted the following hypothesis for their investigation:

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The following equipment were provided to measure infiltration rate at the two different land use sites:

- A tin can, about 30cm in height and a diameter of 10cm, with both ends removed
- A 1.5-litre bottle of water
- A ruler
- Hammer
- Wooden plank
- Stopwatch

The investigation was conducted on a weekday afternoon in June. They were given 3 hours to complete their investigation, from 2 pm to 5 pm. At the respective sites, the tin can was driven into the soil to about 10cm deep by using a hammer onto a wooden plank placed on the rim of the can. A ruler was placed vertically inside the tin can to record the fall in water level. Water was poured to a depth of 20 cm. Measurements of the remaining depth of water was taken every 1 minute to compute the infiltration rate. At the same time, constant top-ups of water were carried out to maintain a regular head of water above soil.

Resource 1 shows a map of Labrador Nature Reserve, which indicates the locations of Sites A and B. Resource 2 shows data collected on infiltration rates at Sites A and B.

- (a) Explain why the hypothesis crafted by the group is not suitable for the investigation at Labrador Nature Reserve. [2]

Answer Guide:

- Not **specific** – does not specify the sites delineated for investigation and/or the different land uses required
- Not **measurable** – variations in **land use** cannot be measured by level of urbanisation

Point-marked – 1m for identification of reason, and 1m for explanation of reason.

- (b) Explain how the impacts of the investigation could be minimised. [5]

Answer Guide:

- **Minimisation of impacts on the ecosystem in the area**, through measures such as:
 - Minimising the removal of vegetation when hammering the tin can into the soil to measure infiltration rates, especially at Site B
 - Avoiding littering at the park
- **Minimisation of social impacts in the nature park**, given that it is a weekday afternoon in June where there might be members of the public in the

area, through measures such as:

- Conducting investigation away from pathways, especially at Site A given that Site A is a road / next to a carpark
- Reduce noise levels when conducting investigation, as the nature park is an area of leisure and recreation for members of the public.
- Any other impacts & corresponding suggestions – list is non-exhaustive

Levels-marked – see descriptors below

Level	Marks	Descriptors
3	4-5	<ul style="list-style-type: none"> • Response identifies at least 2 impacts in the area that might result from the investigation, and identifies concrete suggestions on how these impacts might be minimized. • Response provides a detailed explanation of how impacts might be minimized. • Use of preamble and Resource 1 to support identified impacts consistently.
2	2 – 3	<ul style="list-style-type: none"> • Response identifies suggestions on how these impacts might be minimized, but these suggestions may not be concrete (e.g. reduce noise pollution – question is, <i>how?</i>). How these suggestions are related to possible impacts of the investigation may be unclear. • Response provides appropriate explanations of how impacts might be minimized, but explanations might be lacking in detail. • Use of preamble and Resource 1 to support identified impacts might be present, but not consistent in explanation.
1	1	<ul style="list-style-type: none"> • Response only identifies 1 suggestion to minimize impacts of investigation with explanation, OR may identify at least 2 suggestions without corresponding explanations at all. How these suggestions are related to possible impacts of the investigation may be unclear. • Minimal reference to Resource 1 and preamble, if at all.
0	0	No creditworthy response

- (c) With reference to Resource 2, sketch a line graph to represent the infiltration rates for Site A and Site B over time respectively. Suggest **one** reason why this method may be better than the one depicted in Resource 2. [6]

Answer Guide:

- Sketch of line graph:
 - 2 marks for Site A and B respectively. Marks are allocated based on:
 - Accuracy of data points
 - Use of appropriate x- and y- axes
- Possible reasons for line graph being an improvement over the table (1m for identified reason, 1m for explanation):
 - Easier **visualization** of change of infiltration rates over time at each site
 - Easier **comparison** of difference in change in infiltration rates between

- Sites A and B
- Any other appropriate reason accepted.

Point marked.

- (d)** With reference to Resources 1 and 2, account for the differences in infiltration rates between Sites A and B. [5]

Answer Guide:

- Infiltration rates at Site A are lower than at Site B.
 - Site A: Being located at a car park / road, the ground is therefore likely to be concretised and largely impermeable. This hence reduces infiltration rates at the area.
 - Site B: Being located directly within the gazetted nature reserve area in Labrador Nature Reserve, it is likely that vegetative cover is high. This means that soil will be more permeable owing to the presence of plant roots that provide fissures, thus enhancing infiltration rates.

Point marked.

- (e)** Evaluate the usefulness of the investigation in understanding the influence of land use on infiltration rates, and suggest how the investigation could be improved. [7]

Answer Guide:

Possible points for evaluation of usefulness of the investigation:

- Arguments supporting the view that the investigation has been useful:
 - Does allow for a conclusion to be drawn that variations in land use do impact infiltration rates in the area.
 - Sites selected for investigation are very clearly of two different types of land use, contributing to the validity of the investigation in meeting its aims
- Arguments against the view that the investigation has been useful:
 - Accuracy of the investigation is unclear, given:
 - The use of a single-ring infiltrometer rather than a double-ring infiltrometer, which means that the lateral flow of water is not controlled in the investigation
 - Investigation was not repeated in the same session
 - Reliability of the investigation is unclear, given that:
 - Only one session of the investigation was conducted, and on only one day

Possible suggestions on how to improve the investigation:

- Improve reliability and accuracy of the investigation through:
 - Using a double-ring infiltrometer to control lateral flow of water during the investigation
 - Choice of more sites of different land uses to corroborate findings further
 - Repetition of investigation on the same day, near to Sites A and B respectively, and taking the average result
 - Having multiple sessions across several days and taking the average result.

Level	Marks	Descriptors
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3	6 - 7	<ul style="list-style-type: none"> • Response is largely evaluative, with a clear stand on the issue supported by reasons for evaluation. A higher-level response might provide evaluative criteria to analyse the view. • Response is balanced (i.e. provides multiple perspectives on the issue). Reasons for evaluation are well-developed. • Suggestions for improvement are clearly explained. • Detailed and accurate use of all relevant Resources and/or own knowledge to support points for evaluation of usefulness of investigation and suggestions for improvement.
2	3 - 5	<ul style="list-style-type: none"> • Response is broadly evaluative – i.e. provides a stand and some reasons for evaluation. • Response might lack balance (i.e. provides multiple perspectives on the issue) and/or depth of explanation. • Suggestions for improvement are provided, but may not be consistently well-developed throughout. • Use of all relevant Resources and/or own knowledge to support points for evaluation of usefulness of investigation and suggestions for improvement is present, but not consistent.
1	1 - 2	<ul style="list-style-type: none"> • Response is largely descriptive – i.e. states points for and/or against the view without a stand/ evaluation. • Response lacks balance (i.e. provides multiple perspectives on the issue) and/or detailed explanations. • Suggestions for improvement are provided, but may not be elaborated on (e.g. why the suggestion, how it improves over the current investigation, etc.) • Use of Resources and/or own knowledge to support points for evaluation is minimal and/or completely lacking.
0	0	No creditworthy response

Section B

Theme 2: Urban Change

Urban liveability in Ahmedabad, India

- 2 Ahmedabad, the formal capital of the Indian state of Gujarat, is one of the most populous cities in the country as of 2011. It also houses a key urban reimagining project implemented along the Sabarmati River, an important source of water for the city.

Resource 3 shows the trends in slum population in various states in India from 2001 to 2011. Resource 4 shows the distribution of informal settlements in Ahmedabad. Resource 5 shows the main features of urban reimagining of the Sabarmati River in Ahmedabad. Resource 6 is an extract on impacts of urban reimagining of the Sabarmati Riverfront in Ahmedabad.

- (a) Compare the trends in slum population between Gujarat and Delhi from 2001 to 2011 with reference to Resource 3.

[4]

Answer Guide:

Gujarat	Basis of comparison	Delhi
Gujarat experienced an increase in total slum population of 333,386 people.	<i>Change in total slum population from 2001 to 2011</i>	Delhi experienced a decrease in total slum population of 240,500 people.
Both states experienced a decrease in slum population as a proportion of total population: <ul style="list-style-type: none"> Proportion of slum population in Gujarat experienced a drop from 11.7% to 2.8%. 	<i>Change in slum population as a proportion of total population</i>	Both states experienced a decrease in slum population as a proportion of total population: <ul style="list-style-type: none"> Proportion of slum population in Delhi experienced a drop from 18.5% to 10.6%.

- (b) Describe the distribution of the range of informal settlements in Ahmedabad in 2001 using Resource 4.

[4]

Answer Guide:

- The **old city** is located in the **centre of the city**, **directly next to the eastern bank of the major water body** running through Ahmedabad.
- Informal developments** are located **within a 10km radius of the city centre**. These are mainly in the **eastern region** of the city, radiating outwards from the Old City.
- Gamtals** are distributed further afield, within a **6 – 12km radius from the city centre**.
- A number of **informal developments and gamtals** follow the major roads that radiate from the city centre.

Point marked – 2 marks awarded for each accurate observation-evidence pairing.

- (c) With reference to Resource 4, suggest reasons for the distribution of the range of informal settlements in Ahmedabad in 2001.

[5]

Answer Guide:

Possible points that might be raised:

Distribution	Reasons
Location in centre of city	<ul style="list-style-type: none"> • Increased mobility and accessibility around the city, especially to jobs which are located in the city centre • Affordability of location, as slum dwellers are likely not to be able to commute to and from distant locations each day for formal employment
Location near major transport networks	
Location near major water body	<ul style="list-style-type: none"> • Acts as a source of (clean) water for the slum dwellers for daily activities such as cleaning, cooking and drinking, as the slum dwellers may not have infrastructure for potable water within their dwellings.
Gamtals' location further away from city centre	<ul style="list-style-type: none"> • Urban sprawl / expansion of urban areas over time as the size of the city and the number of urban dwellers grow, such that even village areas have been incorporated into the city, as seen from Resource 4.

Levels marked (see level descriptors below):

Level	Marks	Descriptors
3	4-5	<ul style="list-style-type: none"> • Response identifies <u>at least 2 reasons</u> for distribution of informal settlements in Ahmedabad. • Response provides a detailed and appropriate explanation of the reasons for the distribution of informal settlements in Ahmedabad. In addition, reasons are clearly linked to specific described trend(s), rather than generic reasons. • Use of Resource 4 [specific trends identified in part (b) especially] to support identification of reasons throughout the response. Demonstrates understanding of reasons for distribution of informal settlements from own knowledge.
2	2 – 3	<ul style="list-style-type: none"> • Response identifies <u>at least 2 reasons</u> for distribution of informal settlements in Ahmedabad. • Response provides appropriate explanations of suggested reasons for the distribution of informal settlements in Ahmedabad. However, explanations may not be detailed. Reasons provided may be generic, instead of being referenced to a specific trend. • Use of Resource 4 to support identification of reasons in response is present, but not consistently. Demonstrates some understanding of reasons for distribution of informal settlements from own knowledge, but may not be fully accurate.
1	1	<ul style="list-style-type: none"> • Response only identifies 1 reason for distribution of informal

		settlements, OR may identify at least 2 reasons which are inappropriate. Reasons suggested are not elaborated on. <ul style="list-style-type: none"> Reasons provided may be generic, instead of being referenced to a specific trend. Minimal reference to Resource 4, if at all.
0	0	No creditworthy response

- (d) With reference to Resource 5, explain **two** ways in which urban reimaging of the Sabarmati Riverfront might have helped enhance urban liveability in the area. [4]

Answer Guide:

- Environmental liveability:
 - Improves sanitation and waste management in the area with the incorporation of industrial sewerage outlets, the Pirana landfill site, and the Pirana sewage treatment plant along the Sabarmati River.
- Social liveability:
 - Provides public spaces for interaction and community gatherings to improve conviviality, as seen from upper level of Promenade which acts as a space to host various activities, and various parks and plazas along the Sabarmati Riverfront
 - Conservation and promotion of cultural heritage through conservation of traditional market (Ravivari, a 606-year old traditional flea market)
- Economic liveability:
 - Public spaces for gatherings to host events & activities (e.g. Ravivari – vendors are able to earn an income through the formal incorporation of the flea market into the riverfront)

Point marked – 2 marks awarded for each well-developed explanation, with clear identification of the aspect of liveability that is improved.

- (e) Using Resources 5 and 6 and your own knowledge, evaluate the extent to which urban reimaging along Sabarmati Riverfront has improved the lives of slum dwellers in Ahmedabad. [8]

Answer Guide:

Possible points for evaluation:

- Arguments supporting the view that the lives of slum dwellers have improved can point to any of the reasons seen in Resource 5 - especially the improvement of **environment liveability** through improved sanitation and waste management, and improvement of **economic liveability** through the conservation of the traditional flea market which some slum dwellers are likely to be engaged in. Some of these points are corroborated in Resource 6 – e.g. “cleaner waterway” and the incorporation of the “interceptor sewerage system” which enhances environmental liveability.
- Arguments against the view that the lives of slum dwellers have improved can point to the following that are evident in Resource 6:
 - Displacement of slum dwellers, which separates them from their homes, livelihoods and way of life (thus negatively affecting social and economic liveability)
 - Resettlement projects do not meet the need of slum dwellers, negatively affecting social and economic liveability as well (similar

points to displacement of slum dwellers).

Levels marked using H1 Generic Level Descriptors for 8m DRQ on Theme 3.

Section C

Answer **two** questions from this section.

Either Question 3 **or** Question 4, and **Either** Question 5 **or** Question 6

Theme 1: Climate Change and Flooding

3 (a) Explain the processes underlying contemporary climate change. [9]

Indicative content:

- Responses focuses on accounting for contemporary climate change – i.e. global warming due to the enhanced greenhouse effect, as well as changes to precipitation.
- Response acknowledged the role of increasing concentrations of greenhouse gases (GHGs) in the atmosphere through human activities, resulting in the absorption of absorb re-radiated long-wave solar radiation from the earth, hence leading to the warming up of the atmosphere.
- Response would also explain the factors/ trends that have led to the increasing concentrations of GHGs: burning of fossil fuels; industrialization; deforestation.
- Direct human changes to regional and local hydrological cycles may also induce changes to seasonality of precipitation and droughts.
- A higher level response will offer detailed explanations of both changes in temperature and precipitation patterns.

Levels marked using H1 generic level descriptors for 9m SEQ sub-part (a).

(b) To what extent do you agree that there are economic, environmental and social dilemmas in mitigating and adapting to contemporary climate change? [16]

Indicative content:

- “Dilemmas” – refers to as situation where there is desire to pursue seemingly competing/ opposing goals.
 - Economic dilemmas: countries perceive that mitigating/ adapting to climate change might imply a slowing of economic growth (particularly problematic for countries at low levels of development), yet, recognizing that the effects of climate change might eventually also lead to hindrances in economic development.
 - Environmental dilemmas: while attempting to tap alternative energy sources in order to mitigate climate change, these may sometimes generate other environmental impacts – e.g. hydro power and resultant hydrological impacts; nuclear energy and fears of nuclear fallout. Adaptation strategies such as the use of drought-resistant crops may also pose ecological problems, for e.g. due to the need for more fertilisers.
 - Social dilemmas: In implementing certain strategies/ policies to mitigate climate change, the needs of certain social groups may be neglected relative to others/ some social groups may be impacted more than others – e.g. use of hydropower usually involves the construction of dams and resultant flooding of upstream areas. This leads to possible displacement of certain groups of people. E.g. implementation of green taxes on certain products may indirectly also limit the consumption choices for certain households which may have lower income; i.e. the tax impacts the lower income groups more.

- A higher level response will have a clear statement of degree of agreement with the perspective offered. Responses should provide justification for their stand.
- One approach might be to consider if there are indeed dilemmas in all 3 areas. Another approach might be to suggest that dilemmas might indeed occur in the short term, however, in the long run, these dilemmas might be resolved as there are changes in mindsets and priorities in the future in relation to climate changes (either because of worsening effects of climate change or the success of mitigation/ adaptation strategies become more evident).

Levels marked using H1 generic level descriptors for 16m SEQ sub-part (b).

4 (a) Explain how flood hydrographs vary in the tropics. [9]

Indicative content:

- In essence, students are required to discuss how variations in the components of flood hydrographs are a result of variations within the tropics. Therefore, in order to address the question, students are required to do the following:
 - Identify variations within the tropics that would result in differences in flood hydrographs – in this case, differences in **climatic characteristics** (particularly **precipitation intensity and duration**) between the humid and arid tropics
 - Explain why such differences in climatic characteristics would result in precipitation would therefore account for differences in the components in hydrographs. In particular, the components that definitely need to be highlighted include:
 - Lag time
 - Peak discharge
 - Steepness of the ascending limb
- Responses should be accompanied with well-labelled diagrams that show differences in components of flood hydrographs.
- A higher level response will offer detailed explanations of variations in the tropics, and how that affects the various components of flood hydrographs.

Levels marked using H1 generic level descriptors for 9m SEQ sub-part (a).

(b) “Flooding hazards are largely due to forces beyond the control of men.”

To what extent do you agree with this view? [16]

Indicative content:

- Students should discuss both natural and anthropogenic causes of flooding, and provide a comparison of the **relative** importance of nature in causing flooding hazards in the world today.
 - In the case of natural causes of flooding, students may particularly want to discuss the role of heavy rainfall in causing flooding hazards.
 - In the case of human causes of flooding, students could discuss the roles of deforestation and urbanisation in causing flooding hazards. The role of climate change in intensifying rainfall events, leading to greater frequency and/or magnitude of flooding hazards could also be raised.
- Some possible arguments that students could raise might include:
 - Agreeing with the statement: i.e. While human activities do have a part to play in causing floods, natural causes are still more important.
 - Disagreeing with the statement: i.e. While natural causes do have a part to play, human factors contribute more greatly to flooding hazards. Students could possibly use current urbanization trends and the trend of global warming to elaborate on their arguments.
 - Arguments for natural or anthropogenic factors **alone** are not recommended, as such arguments do not reflect an awareness of the complexity of factors that could possibly cause flooding hazards.

- Students should, where possible, make reference to case studies that
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demonstrate the relative importance of human activities / natural factors in causing flooding hazards.

- A higher level response will have a clear statement of degree of agreement with the perspective offered. Responses should provide justification for their stand.

Levels marked using H1 generic level descriptors for 16m SEQ sub-part (b).

Theme 2: Urban Change

- 5 (a) Explain why traffic congestion occurs in cities of countries at varying levels of development. [9]

Indicative content:

- As traffic congestion occurs when the volume of traffic generates a demand for space that is greater than the available road capacity, responses should include a discussion of why volume of traffic has increased over time and/or why road capacity is unable to cope with the demand for space. Students could explain the direct and indirect factors that would result in traffic congestion – e.g. the increase in number of vehicles on the road could be due to changing car ownership patterns and changing landuse patterns (which are indirect factors).
- A higher level response might include the following:
 - Reasons given for why volume of traffic might exceed road capacity should be **contextualised** to cities in developed countries (DCs) and developing countries (LDCs). E.g. High levels of car ownership might be seen in DC cities owing to a larger proportion of middle- and high-income earners in the population.

Levels marked using H1 generic level descriptors for 9m SEQ sub-part (a).

- (b) Assess the success of strategies to manage traffic congestion in cities of countries at varying levels of development. [16]

Indicative content:

- Responses should discuss the extent to which strategies used to manage traffic congestion are successful (i.e. effective in meeting its intended purpose), using a criterion/ a set of weighing criteria. More than one strategy needs to be discussed.
- Case studies of strategies used to manage traffic congestion from DC and LDC cities should be utilised in the essay.
- A higher level response might include the following:
 - *Consistent* application of a set of criteria or criterion to evaluate the success of different strategies.
 - **Comparison** of the relative success of strategies between cities in DCs and LDCs respectively.

Levels marked using H1 generic level descriptors for 16m SEQ sub-part (b).

- 6 (a) Explain why urban trends in cities at different levels of development vary. [9]

Indicative content:

- Responses focuses on accounting for the difference in levels of urbanization and rate of urbanization between cities of countries at different levels of development.
- Reasons would consider the different stage of urbanization of these cities; the differing role of natural increase; rural-urban migration and decentralization.
- Responses may also consider the role of recent efforts in urban reimaging.
- A higher level response will offer detailed explanations in relation to the differing contexts of the cities.

Levels marked using H1 generic level descriptors for 9m SEQ sub-part (a).

- (b) “Cities should be planned for people, not places.”

To what extent do you agree with this view in relation to the effectiveness of strategies to improve liveability in cities? [16]

Indicative content:

- The quote suggests that urban plans and/ or proposed changes/ improvements to cities should seek to cater to the needs of people, and not merely for the sake of improving the city (either aesthetically or economically). In other words, effective strategies that improve liveability are those that meet the needs of people.
- Responses would need to consider how current strategies to improve liveability – urban reimaging; strategies to meet needs of different social groups; strategies to mitigate crowding or fear; strategies to mitigate issues of urban development – do indeed meet the needs of people, and/or the extent to which they do so.
- Responses might also counter-propose that it is not necessary nor practical to distinguish between “people” and “place” as even strategies that seem to focus on aesthetical improvements do serve to meet the needs of people too – e.g. improved quality of physical environment which may enhance aspects of safety, comfort, etc.
- A higher level response will have a clear statement of degree of agreement with the perspective offered. Responses should provide justification for their stand.

Levels marked using H1 generic level descriptors for 16m SEQ sub-part (b).