



VICTORIA JUNIOR COLLEGE
JC 2 PRELIMINARY EXAMINATION 2018
HIGHER 1

H1 GEOGRAPHY

8813/01

Paper 1

3 hours

READ THESE INSTRUCTIONS FIRST

Write your name and index number on the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use an HB pencil for any diagrams or graphs.
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.

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 map should be drawn whenever they serve to illustrate and answer.

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

Section A**Theme 3: Geographical Investigation**

- 1** A group of 6 student researchers from the Research Institute of Hyderabad conducted a study in the vicinity of Wailepalle Village in Andhra Pradesh, India to assess the variables affecting infiltration in the area of study.

The researchers carried out infiltration measurements at 6 study sites. Study Sites A-E were randomly selected and were located close together. Study Site F was selected to compare with findings from Site A – E. Study Site F was located in Wailepalle Village and downslope of Study Sites A – E.

Infiltration measurements were taken over a period of 4 days at Study Sites A – E and 2 months later at Study Site F. At each study site, measurements were taken over 3 hours using the same double ring infiltrometer.

Resource 1 shows a map of the study area. Resource 2 shows a table of the infiltration rate measurements (mm/h) for Study Sites A – E. Resource 3 shows a photograph of the equipment setup for the infiltration measurements used at all study sites.

- (a) With reference to Resource 1, explain why it is appropriate to select Site F for comparison with Sites A – E.
[5]
- (b) With reference to Resources 2 and 3, explain the possible measures taken by the group of researchers to improve the reliability of their data.
[4]
- (c) Suggest additional measures the researchers can take to improve the reliability of their data.
[3]
- (d) With reference to Resource 2, explain the strengths and limitations of the data presentation technique shown.
[5]
- (e) With reference to Resources 1, 2 and 3, evaluate the accuracy of the data collected.
[8]

Section B**Theme 2: Urban Change****Urban trends in USA**

- 2** Resource 4 shows the changes in the percentage of the population living in urban and rural areas in the USA between 1900 and 2010. Resource 5 shows the 10 largest international migrant groups in New York City, USA in 2015. Resource 6 shows the elderly population (aged 65 and above) in New York City from 1990 to 2011. Resource 7 shows the socio-economic characteristics of selected groups in New York City in 2015.
- (a)** With reference to Resource 4, describe the changes in the level of urbanisation in the USA between 1900 and 2010. [3]
- (b)** With reference to Resource 5, describe the trends in international migration to New York City. [4]
- (c)** With reference to Resource 6, describe the changes in the elderly population (aged 65 and above) in New York City between 1990 and 2011. [4]
- (d)** With reference to Resource 7, explain the possible issues that immigrants from the Dominican Republic might face in New York City. [6]
- (e)** With reference to Resources 5, 6, 7 and your own knowledge, discuss the challenges that the New York City authority might face in catering to the needs of migrants in the city. [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 factors that contribute to storm runoff generation in the tropics. [9]
- (b) Discuss the factors that contribute to the development of tropical cyclones. [16]
- 4 (a) Explain the fluvial processes in the tropics. [9]
- (b) To what extent is the El Nino Southern Oscillation an important factor influencing rainfall patterns in the tropics? [16]

Theme 2: Urban Change

- 5 (a) Explain the factors that affect urban liveability in cities in countries at high levels of development. [9]
- (b) To what extent can the same strategies be used to manage traffic congestion in cities in countries at different levels of development? [16]
- 6 (a) Explain the concepts of *needs* and *limitations* in sustainable development for urban areas in countries at low levels of development. [9]
- (b) Discuss the issues that the elderly living in the city may face. [16]



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Paper 1 INSERT

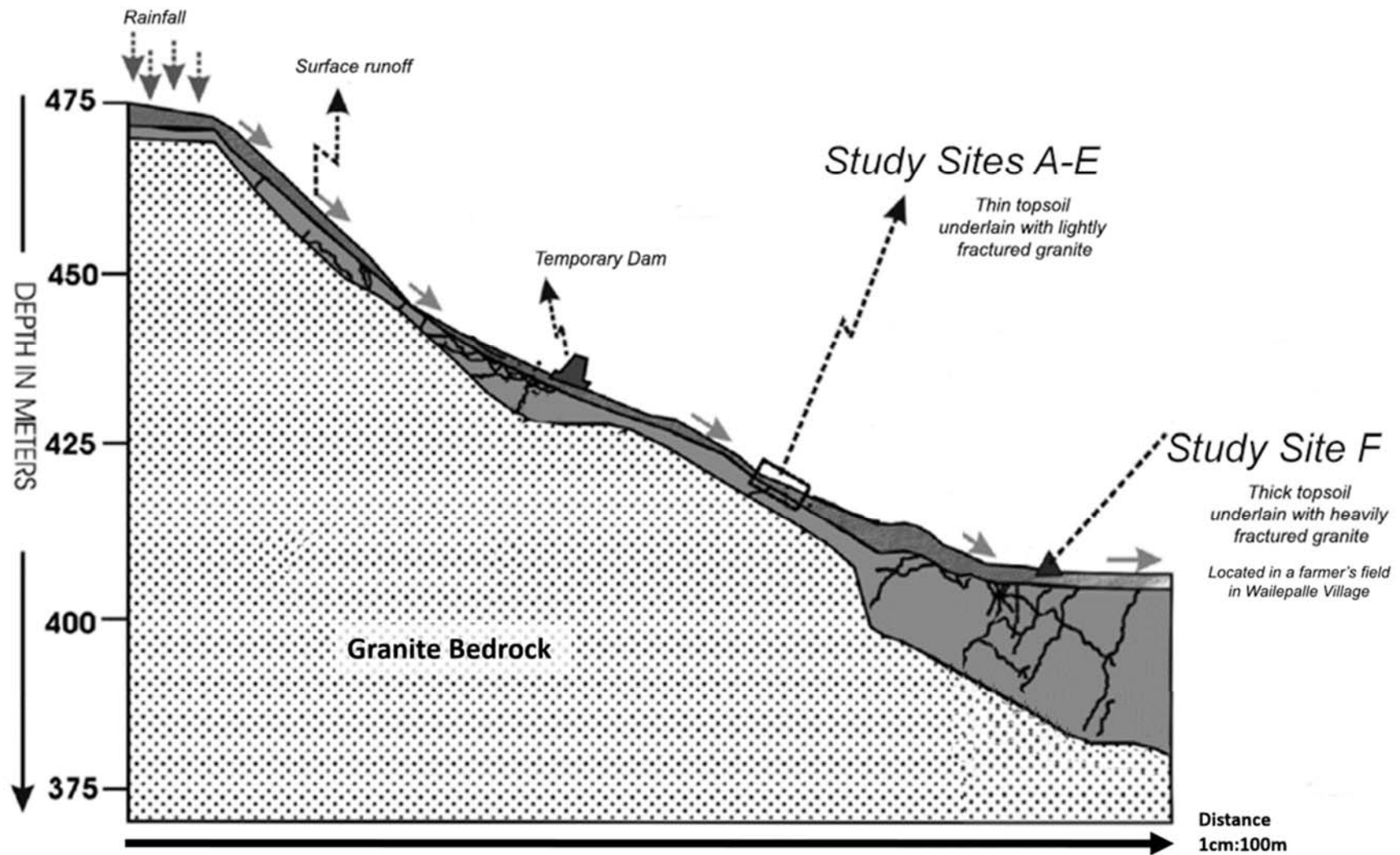
3 hours

READ THESE INSTRUCTIONS FIRST.

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

Resource 1 for Question 1

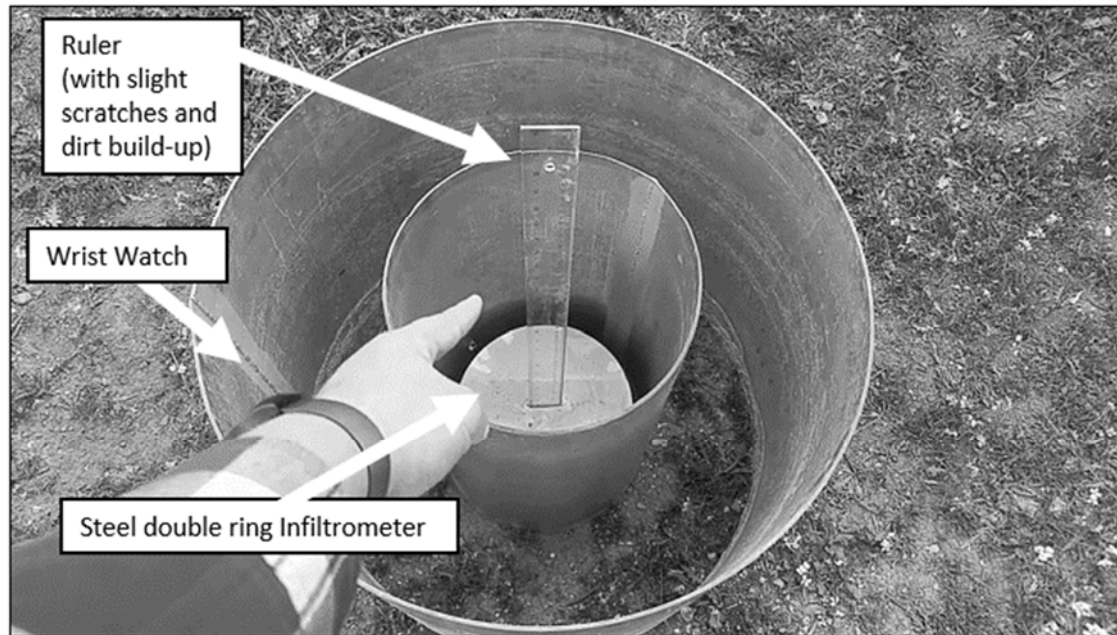
Map of the study area



Resource 2 for Question 1

Table of the infiltration rate measurements (mm/h) for Study Sites A – E

Time interval (min)	Study Site A	Study Site B	Study Site C	Study Site D	Study Site E
0	15 May 2005	16 May 2005	17 May 2005	17 May 2005	18 May 2005
2	545.45	1500.00	545.45	1813.95	270.00
4	545.45	1500.00	590.91	1813.95	315.00
6	554.55	1545.45	636.36	1813.95	405.00
8	545.45	1618.18	636.36	1813.95	405.00
10	527.27	1636.36	618.18	1813.95	405.00
15	436.36	1818.18	501.82	1770.42	338.40
20	436.36	1818.18	509.09	1451.16	338.40
25	436.36	1818.18	509.09	1451.16	338.40
30	436.36	1818.18	509.09	1451.16	338.40
40	363.64	1272.73	509.09	1451.16	331.20
50	363.64	1272.73	501.82	1451.16	331.20
60	363.64	1272.73	501.82	1451.16	331.20
80	272.73	1145.45	490.91	1052.09	302.40
100	272.73	1145.45	490.91	1052.09	304.20
120	272.73	1145.45	490.91	1052.09	304.20
150	242.42	872.73	490.91	1052.70	304.80
180	242.42	872.73	Not measured	Not measured	Not measured

Resource 3 for Question 1**Equipment setup for the infiltration measurements used at all study sites****Resource 3A**

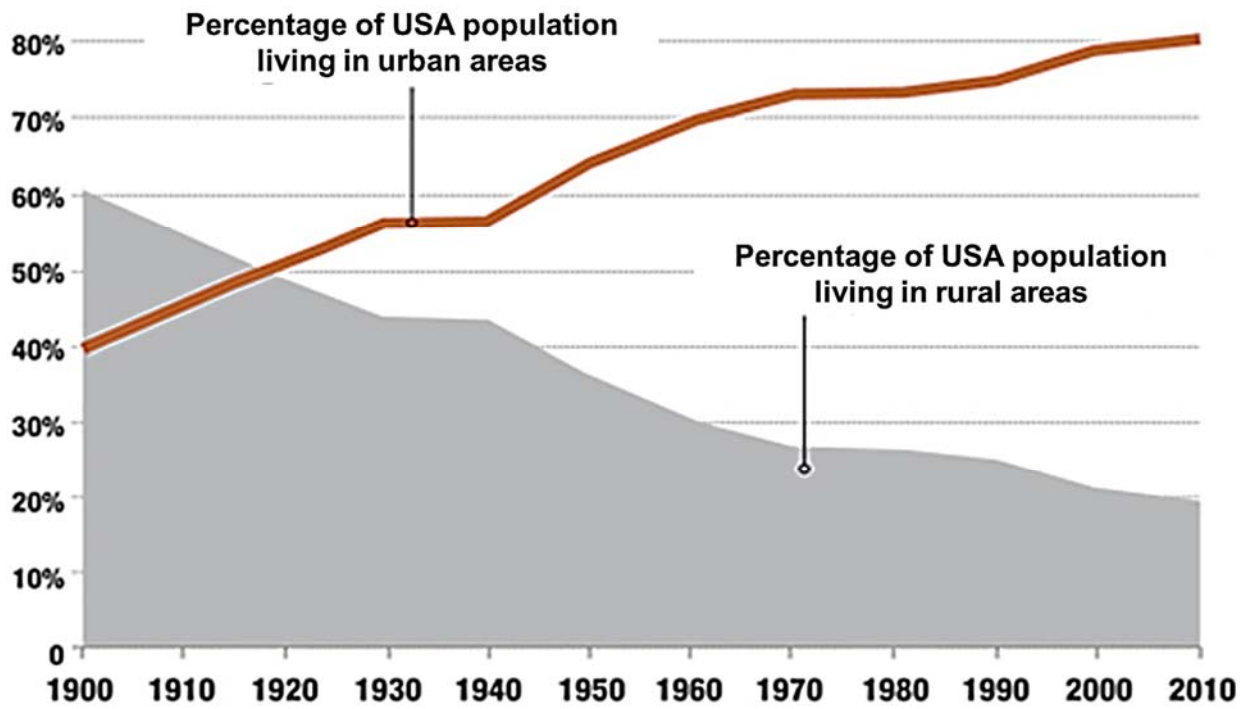
Infiltrimeter setup for the infiltration measurements used at all study sites.
Time intervals for Study Sites A – E were measured using a wrist watch.

**Resource 3B**

A stopwatch used to measure time intervals for Study Site F.

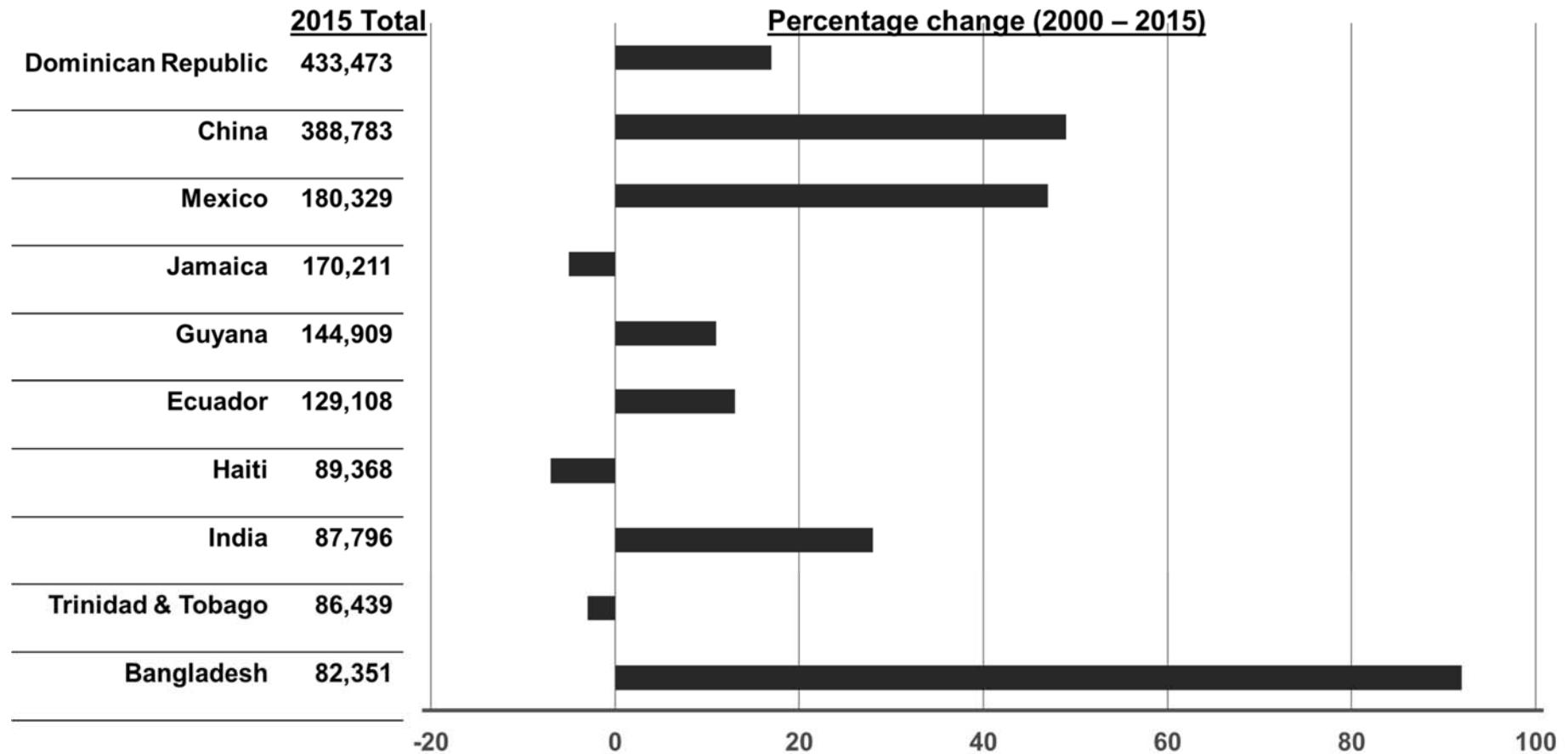
Resource 4 for Question 2

Changes in the percentage of the population living in urban and rural areas in the USA between 1900 and 2010



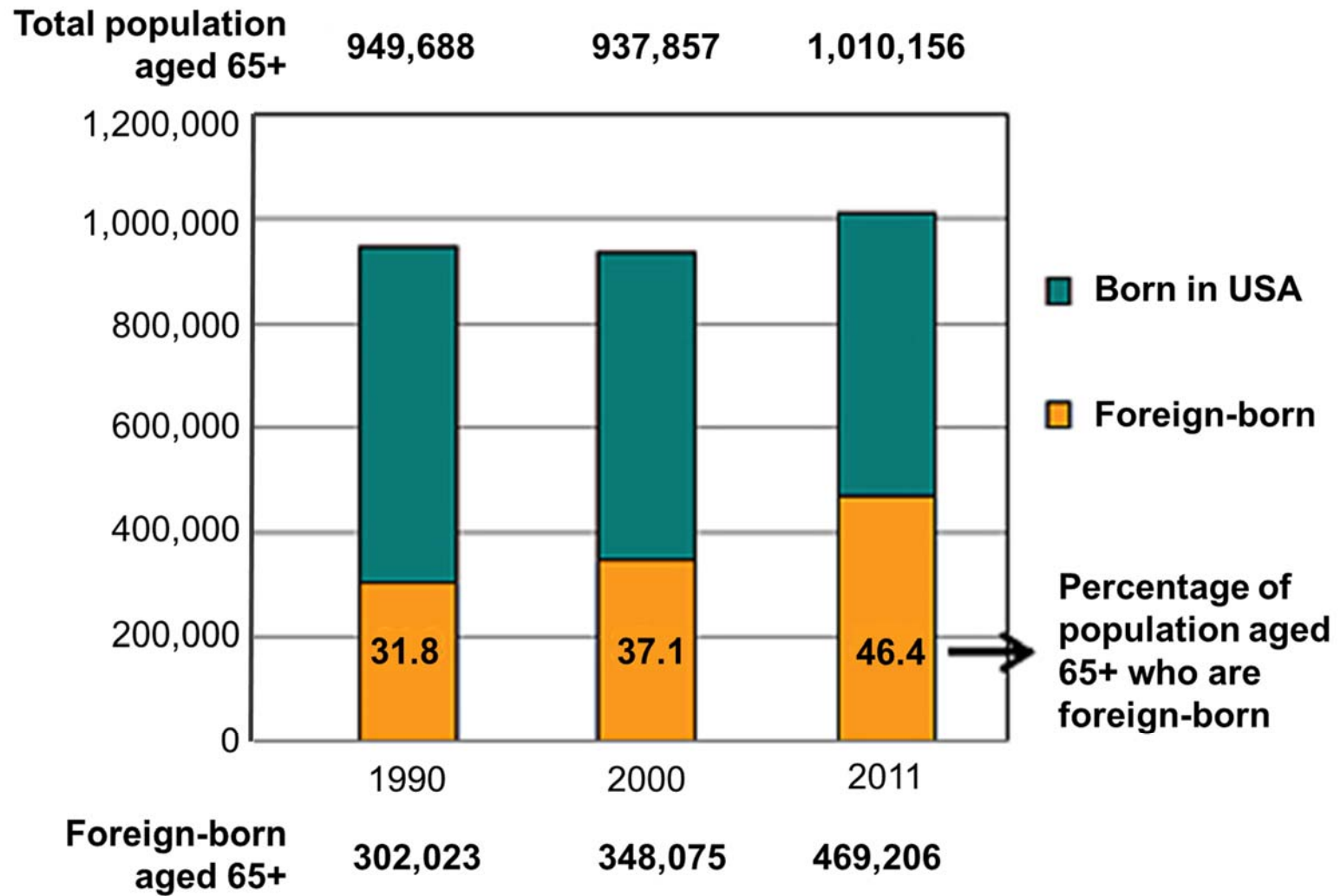
Resource 5 for Question 2

10 largest international migrant groups in New York City in 2015



Resource 6 for Question 2

Elderly population (aged 65 and above) in New York City from 1990 to 2011



Resource 7 for Question 2

Socio-economic characteristics of selected groups in New York City in 2015

	Median age (years)	Percentage with limited English proficiency	Percentage with at least a university degree	Poverty rate (%)	Percentage who owns their homes
• Born in USA	28	5.6	44.2	19.8	32.1
• Foreign-born	46	48.8	28.7	18.7	31.2
↳ Dominican Republic	46	70.5	12.2	31.8	9.2
↳ China	48	76.6	27.2	22.3	45.2
↳ Guyana	50	2.1	17.3	10.3	51.8

Section A

Theme 3: Geographical Investigation

- 1 A group of 6 student researchers from the Research Institute of Hyderabad conducted a study in the vicinity of Wailepalle Village in Andhra Pradesh, India to assess the variables affecting infiltration in the area of study.

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Infiltration measurements were taken over a period of 4 days at Study Sites A – E and 2 months later at Study Site F. At each study site, measurements were taken over 3 hours using the same double ring infiltrometer.

Resource 1 shows a map of the study area. Resource 2 shows a table of the infiltration rate measurements (mm/h) for Study Sites A – E. Resource 3 shows a photograph of the equipment setup for the infiltration measurements used at all study sites.

- (a) With reference to Resource 1, explain why it is appropriate to select Site F for comparison with Sites A – E.

[5]

Indicative content:

Due to following conditions at F:

Similar to Sites A-E:

- Within close proximity (distance evidence) of Sites A-E, thus experiences similar precipitation conditions.

Difference to Sites A-E:

- Further downstream (distance evidence) therefore surface run-off less affected by dam
- Location at base of slope allows more infiltration
- Thick soil allows more infiltration
- More fractured granite allows more infiltration
- Base of slope and thick soil leads to higher antecedent moisture which allows less infiltration

Levels-marked

- (b) With reference to Resources 2 and 3, explain the possible measures taken by the group of researchers to improve the reliability of their data.

[4]

Indicative content

Measures taken:

- Same equipment setup for all days
- Stopwatch and wrist watch was recalibrated before the start of measurements for the day.
- Same time intervals.
- Ruler was cleaned before each set of measurements.

Point-marked

- (c) Suggest additional measures the researchers can take to improve the reliability of their data.

[3]

Indicative content

Measures they could have taken

- Used either wrist watch or stop watch for all measurements
- Continued with 1 day 1 site intervals - 17 May had 2 measurements
- Continued measuring at Site C and E at the 180min mark - No measurements for Site C-E at 180 mins.

Point-marked

- (d) With reference to Resource 2, explain the strengths and limitations of the data presentation technique shown.

[5]

Indicative content

Table:

- Columns (days) and rows (time intervals) allow better organisation (+ve)
- Easy to compare across different study sites (+ve)
- Difficult to see trends and patterns for each study site and across study sites (–ve)

Levels-marked

- (e) With reference to Resources 1, 2 and 3, evaluate the accuracy of the data collected.

[8]

Indicative content

- Appropriate equipment - Double ring infiltrometer outer ring ensures not lateral seepage, wrist watch & stopwatch for time intervals
- Ruler measurements taken at eye level to avoid error, dirty or scratched ruler surface (reduced accuracy)
- Different days to ensure study sites are not affected by previous site measurements
- Random sampling of 5 sites – no bias BUT may not be representative of the whole study area (reduced accuracy)

- Study Site F chosen (stratified sampling) better accuracy in terms of representation

Levels-marked using the generic descriptors for H1 8m DRQ from Theme 3

Section B

Theme 2: Urban Change

Urban trends in USA

- 2 Resource 4 shows the changes in the percentage of the population living in urban and rural areas in the USA between 1900 and 2010. Resource 5 shows the 10 largest international migrant groups in New York City, USA in 2015. Resource 6 shows the elderly population (aged 65 and above) in New York City from 1990 to 2011. Resource 7 shows the socio-economic characteristics of selected groups in New York City in 2015.

- (a) With reference to Resource 4, describe the changes in the level of urbanisation in the USA between 1900 and 2010.

[3]

Indicative content

- Overall, there is an increase in the level of urbanisation from 1900 to 2010.
- The increase in the level of urbanisation started to slow down after 1950.
- Generally, level of urbanisation experienced an upward trend except for between 1930 and 1940.

Point-marked

- (b) With reference to Resource 5, describe the trends in international migration to New York City.

[4]

Indicative content

- Dominican Republic is the largest group.
- Bangladesh is the smallest group out of the ten.
- Nevertheless, Bangladesh has experienced the largest percentage increase.
- Out of the ten largest groups, majority have experienced increase in numbers.
- Only three experienced a decrease.

Levels-marked

Level	Marks	Descriptor
2	3 – 4	Response highlights key patterns. Good and accurate use of the resource throughout by citing relevant figures from the resource. Response is consistently clear, detailed and focused on the question.
1	1 – 2	Response does not highlight any key pattern. Limited or no use of the resource. Response lacks clarity, detail and focus on the question.
0	0	No creditworthy response.

- © With reference to Resource 6, describe the changes in the elderly population (aged 65 and above) in New York City between 1990 and 2011.

[4]

Indicative content

- Total elderly population increased from 1990 to 2011.
- The number of elderly who are foreign-born increased.
- However, the number of elderly who are born in USA decreased.
- The proportion of elderly who are born in USA declined, while the proportion of elderly who are foreign-born increased.

Levels-marked

Level	Marks	Descriptor
2	3 – 4	Response highlights key patterns. Good and accurate use of the resource throughout by citing relevant figures from the resource. Response is consistently clear, detailed and focused on the question.
1	1 – 2	Response does not highlight any key pattern. Limited or no use of the resource. Response lacks clarity, detail and focus on the question.
0	0	No creditworthy response.

- (d) With reference to Resource 7, explain the possible issues that immigrants from the Dominican Republic might face in New York City.

[6]

Indicative content

- Difficulty in assimilating due to language barrier.
- Difficulty in getting jobs with good wages due to limited English proficiency and lack of educational qualifications.
- Because of their low income (indicated by the high poverty rate), they may face multiple deprivations (e.g. lack of access to adequate healthcare, lack of access to housing of reasonable quality, etc.)

Levels-marked

Level	Marks	Descriptor
3	5 – 6	Response covers at least two issues. The issues cited are linked to the socio-economic characteristics of migrants from the Dominican Republic shown in the resource, and are also specific to the issues faced by migrants. The issues are well-explained. Good and accurate use of the resource. Response is consistently clear, detailed and focused on the question.
2	3 – 4	Response covers at least two issues. The issues cited are largely linked to the socio-economic characteristics of migrants from the Dominican Republic shown in the resource, and are also largely specific to the issues faced by migrants. The issues are mostly accurate and well-explained, though there may be some gaps. Resource is used for some parts of the response. Response may lack clarity, detail and focus on the question at some parts.
1	1 – 2	Response covers only one issue. The issues cited have limited links to the socio-economic characteristics of

		migrants from the Dominican Republic shown in the resource, and are also not specific to the issues faced by migrants. The issues are not well-explained, with many gaps. Limited or no use of the resource. Response lacks clarity, detail and focus on the question.
0	0	No creditworthy response.

- (e) With reference to Resources 5, 6, 7 and your own knowledge, discuss the challenges that the New York City authority might face in catering to the needs of migrants in the city.

[8]

Indicative content

Possible challenges include:

- An increasing strain on the city authority's resources to provide for the migrants
 - The number of migrants have likely increased (Resource 5)
 - The migrants may be poor (Resource 5 and Resource 7)
- Difficult to meet all the needs of migrants since the issues they face may vary
 - The migrants are diverse in terms of their socio-economic profile (Resource 7)
- Furthermore, the fact that there is a growing proportion of elderly migrants (Resource 6) will make efforts to meet the needs of migrants more complex

Levels-marked using the generic descriptors for H1 8m DRQ from Themes 1 and 2

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 factors that contribute to storm runoff generation in the tropics. [9]

Indicative content

Responses could consider factors such as nature of precipitation, soil characteristics and human activities.

Higher level responses may show a strong awareness of how both human and natural factors can affect storm runoff generation. They may also demonstrate an awareness of how the factors may result in variations in storm runoff generation in the tropics (e.g. between humid and arid tropics or between different parts of the same drainage basin). There will be a good coverage of both infiltration excess and saturation overland flow in the higher level responses.

- (b) Discuss the factors that contribute to the development of tropical cyclones. [16]

Indicative content

Responses should evaluate the importance of different factors that result in the development of cyclones.

These include high amount of insolation, ocean surface temperatures greater than 26° - 27°C; weak vertical wind shear (minimal wind speed and direction changes with height); sufficiently strong Coriolis effect; and development of a strong upper air outflow of wind

Stronger responses will be able to weigh the importance of the different factors relative to specific aspects (criteria) of a cyclone's development e.g. structure, strength etc. or specific context e.g. during an El Nino event. The strongest responses will be well supported with relevant examples.

- 4 (a) Explain the fluvial processes in the tropics. [9]

Indicative content

Responses consider the various fluvial processes in the tropics (i.e. deposition, erosion and transportation).

Higher level responses will cover all three processes and will show a strong awareness of the variations in fluvial processes in the tropics (e.g. spatial variations or temporal variations).

- (b) To what extent is the El Nino Southern Oscillation an important factor influencing rainfall patterns in the tropics? [16]

Indicative Content

Responses should evaluate the importance of the ENSO in the formation of rain in the tropics (reversal of the Walker circulation, cyclones).

Stronger responses will be able to weigh the importance of the ENSO event relative to existing factors influencing rainfall in the tropics e.g ITCZ, monsoons in specific contexts (eastern vs western Pacific, areas affect by teleconnections). The strongest responses will be well supported with relevant examples.

Theme 2: Urban Change

- 5 (a) Explain the factors that affect urban liveability in cities in countries at high levels of development.

[9]

Indicative content

Responses could consider the political, socio-economic and environmental factors that affect urban liveability in countries at high levels of development.

Higher level responses will have a good coverage of factors (e.g. covering the different dimensions) and show a strong awareness of the factors that are relevant to countries at high levels of development.

- (b) To what extent can the same strategies be used to manage traffic congestion in cities in countries at different levels of development?

[16]

Indicative content

Responses consider the various strategies that can be used to manage traffic congestion (e.g. developing a good public transport system, restricting private vehicle ownership, restricting private vehicle usage, integrating land use planning with transport planning, increasing road capacity and network, etc.) It should be clear to candidates that the focus of the question is not about the effectiveness of strategies, but whether cities in countries at high and low levels of development can employ the same strategies.

Higher level responses would consider:

- Whether the same strategy can be used is dependent on whether the root cause of traffic congestion between cities at different levels of development is the same

AND / OR

- Context—even if the root cause is the same, due to the nature of the strategy (e.g. capital intensive), can it be implemented at a different level of development?

- E.g. Producing a mass rapid transit train system may not be used in countries at lower levels of development as it is capital intensive

- 6 (a) Explain the concepts of *needs* and *limitations* in sustainable development for urban areas in countries at low levels of development.

[9]

Indicative content

Responses should explain the essential needs of the world's poor and also the limitations imposed by the current level of technology and how society is organised on the environment's ability to meet present and future needs.

Higher level responses will show a strong awareness of how these concepts are central to the concept of sustainable urban development. There is also a strong awareness of how these concepts are applicable to urban areas in countries at low levels of development.

- (b) Discuss the issues that the elderly living in the city may face.

[16]

Indicative content

Responses can identify and explain which is the most / least important issue that the elderly living in cities may face.

Higher level response would consider variations. For example:

- Would the elderly living in cities in countries at different levels of development face the same issues? Or would the more pressing issues differ?
- At the same level of development, would elderly living in different cities (be it in the same country or different country) experience the same issues?
- Even within the same city, would the difference in socio-economic status amongst the elderly affect how certain issues would be more pressing than others?