



ST ANDREW'S JUNIOR COLLEGE
J2 Prelims
Higher 2

GEOGRAPHY

Paper 2 Data Response Questions

9751/02

13 September 2017

3 hours

Additional Materials: Answer Paper
1 Insert
World outline map

READ THESE INSTRUCTIONS FIRST

Write your name and class on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use paper clips, highlighters, glue or correction fluid.
Begin each question on a fresh page.

Candidates answer **all** questions.

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.
The world map may be annotated and handed in with relevant answers.
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.

This document consists of **4** printed pages and **1** Insert with **9** pages.

[Turn Over]

Section A

Theme 4 – Geographical Investigation

- 1 Having learnt about how infiltration may be influenced by different factors, a group of 12 students in the UK wanted to test whether their knowledge can be confirmed by actual observations. They selected a small drainage basin near their school for their investigation.

The students had access to a basic topographical map of the drainage basin, and a page from a Geography textbook with graphs depicting the relationships between infiltration and selected factors. They were also given a recording sheet by their teacher for the purpose of recording their measurements. The students were instructed to choose four to six different sites to measure infiltration.

Permission had been sought for the students to visit the drainage basin on one Saturday in June and for 2 hours between 9 a.m. and 11 a.m. during the visit.

After some discussion in the classroom before undertaking the fieldwork, the students decided on the following hypothesis:

Within the drainage basin, infiltration rates are highest in areas with dense vegetation cover.

Resource 1 provides the graphs from the textbook, each showing the relationship between infiltration and one factor. Resource 2 shows the map of the small drainage basin. Resource 3 is the recording sheet they intended to use to help record their measurements at each site.

- (a) With reference to Resources 1 and 2, explain why infiltration rates would vary within the drainage basin. [5]
- (b) With reference to Resource 2, state **three** reasons why the students' suggested hypothesis is capable of research. [3]
- (c) With reference to Resources 2 and 3, write an explanatory account of how the students should decide on the different sites in the drainage basin to measure infiltration rates. [5]
- (d) Describe clearly the equipment(s) that will be required, and the steps the students should take, to obtain the infiltration rates required in the recording sheet in Resource 3. [6]
- (e) With the help of Resources 1, 2 and 3, explain **two** possible limitations the students might face when trying to obtain accurate measurements of infiltration in the drainage basin, and suggest what could be done to overcome them. [6]

Section B**Theme 1 – Tropical Environments****Rainfall and Flooding in India**

2 Resource 4 shows the average dates of onset of the summer monsoon across India and its main mountain ranges. Resource 5 shows the average annual rainfall in India. Resource 6 shows some information on Cyclone Vardah which impacted India in December 2016. Resource 7 is a photograph of flooding in a part of Chennai, a major city in India, after Cyclone Vardah.

(a) With reference to Resource 4, describe the expected progression of the summer monsoon across India. [3]

(b) With reference to Resource 5, describe the spatial variation of rainfall within India. [5]

(c) Using both Resources 4 and 5, explain the spatial variations of rainfall described in **(b)**. [7]

(d) With the help of Resource 6, explain why tropical cyclones, such as Cyclone Vardah, may form and develop off the coast of India. [4]

(e) With the help of Resources 6 and 7, and using your own knowledge, explain whether the flood in Chennai should be fully attributed to Cyclone Vardah. [6]

Theme 2 – Development, Economy and Environment

Development in Africa

- 3** Resource 8 shows the Human Development Index (HDI) in Africa in 2014. Resource 9 shows the Multidimensional Poverty Index (MPI) in Africa in 2015. Resource 10 names the countries shown. Resource 11 shows the core-periphery of the global economy.
- (a)** With reference to Resources 8 and 10, describe the distribution of countries with HDI values **lower than 0.51**. [4]
 - (b)** Suggest and explain **two** reasons for the low values of HDI observed in the countries shown in Resource 8. [5]
 - (c)** Briefly explain the meaning of the term *MPI*, and describe the extent to which countries with low HDI values are also those with more of their population in multidimensional poverty. Support your answer using evidence from Resources 8 and 9. [7]
 - (d)** How useful are Resources 8 and 9 in explaining why Africa is part of the ‘periphery’, as seen in Resource 11? [9]

Theme 3 – Sustainable Development

Traffic Congestion in Paris

- 4** Resource 12 shows the level of car dependence in the Paris region of France, a developed country in Europe, in 2001. Resource 13 shows some statistics related to traffic congestion in Paris in 2016. Paris was ranked the 7th most congested city in Europe in that same year. Resource 14 shows a station of *Vélib'*, a large-scale public bicycle-sharing scheme in Paris, launched in 2007. Bicycle-sharing schemes are increasingly considered as a viable strategy to reduce car dependence in many cities.
- (a)** Describe, and suggest reasons for, the pattern of car dependence shown in Resource 12. [6]
 - (b)** With reference to Resources 12 and 13, explain when and why traffic congestion occurs in Paris. [4]
 - (c)** With the help of Resource 13, suggest and explain some possible **social** and **economic** impacts of traffic congestion in Paris. [6]
 - (d)** With the help of Resources 13 and 14, and using your own knowledge, evaluate the extent to which public bicycle-sharing schemes should be relied on as a means to reduce car dependence in a city. [9]