New Specification

Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2017

Centre Number

Candidate Number

Geography

Assessment Unit AS 3
assessing
Fieldwork Skills and Techniques in Geography

SGG31

[SGG31]
WEDNESDAY 31 MAY, MORNING

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Answer **all** questions.
At the conclusion of this examination attach your fieldwork report and table of data securely to this paper using the treasury tag supplied.
There are two pages at the back of this question and answer booklet for use as continuation sheets as required.

INFORMATION FOR CANDIDATES

The total mark for this paper is 60.
Quality of written communication will be assessed in **Questions 1(b)(ii)** and **1(b)(iii)**.
Figures in brackets printed down the right hand side of pages indicate the marks awarded to each question or part question.

For Examiner's use only		
Question Number	Marks	Remark
1		
2		
Total		

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Answer **all** questions

Submitted summary of fieldwork and table of data.

At the end of the examination these should be attached securely to this paper using the treasury tag supplied.

1 **(a)** With reference to **one** potential hazard associated with your fieldwork, discuss:

- how it was identified; and
- a contingency made to deal with this potential hazard.

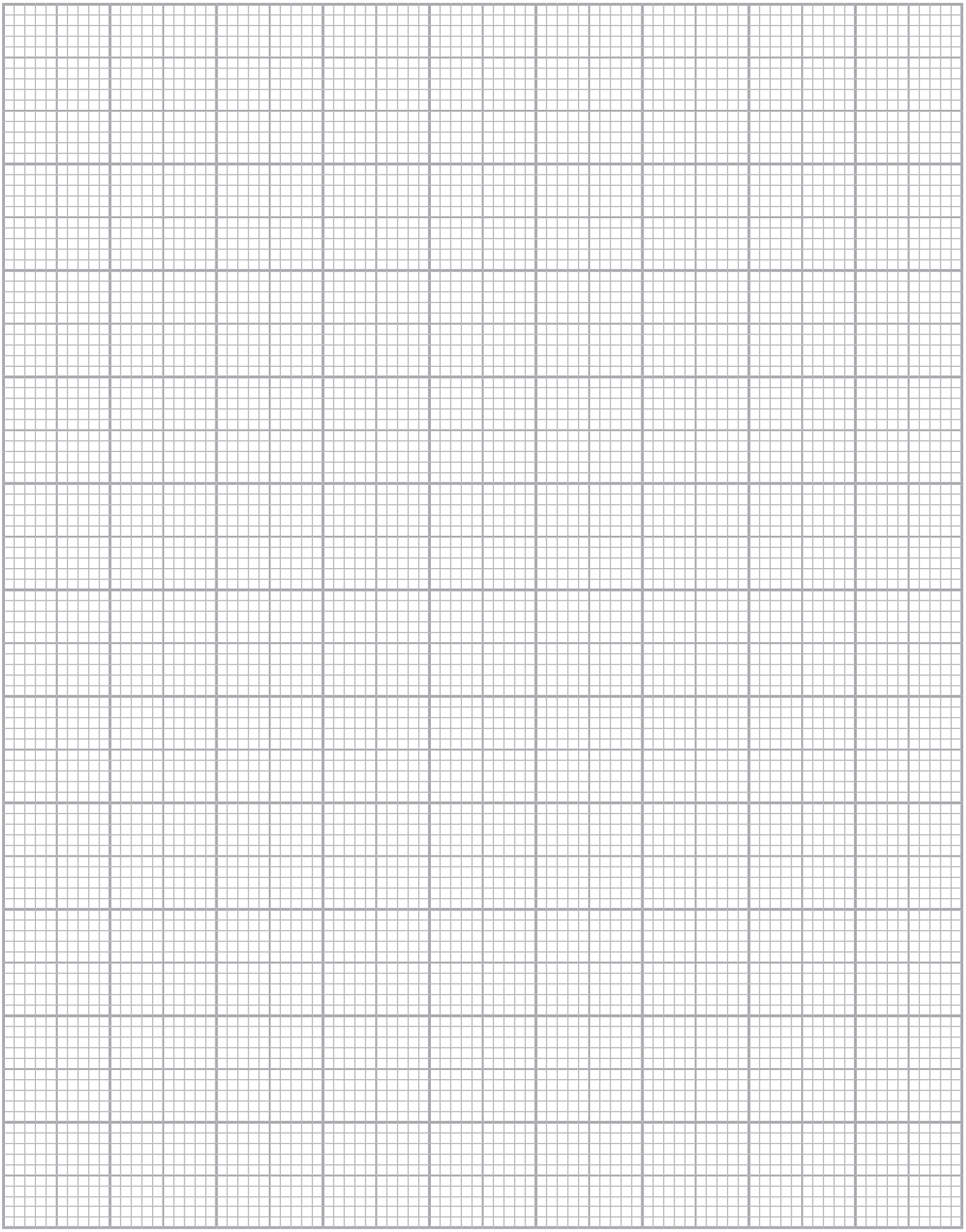
[4]

Examiner Only	
Marks	Remark

(b) (i) Select an appropriate graphical technique to present some or all of the data displayed in your table. Your graph must be relevant to the aim/hypothesis of your fieldwork. [7]

Examiner Only	
Marks	Remark

Title of Graph _____



(ii) With reference to any **one** of the variables displayed on your graph, describe fully how this data was **collected**.

[5]

(iii) Describe your graph, and explain what it shows in relation to the **aim** of your fieldwork, using your geographical knowledge.

[6]

Examiner Only	
Marks	Remark

(c) Select **two** factors from the list below and explain how they influenced the reliability of the data you collected and the nature of your geographical conclusions.

- **Actual weather conditions**
- **Group organisation**
- **Sampling method**
- **Pilot testing**
- **Fieldwork equipment**
- **Time of year**

[8]

Examiner Only	
Marks	Remark

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(Questions continue overleaf)

2 (a) Study **Resource 2A** which relates to the initial stages of a Spearman's rank statistical test. It is used to investigate the relationship between female enrolment in secondary education and the Total Fertility Rate in 2014, for 16 countries.

Resource 2A

Country	X Percentage of females of secondary school age enrolled in education (%)	Rank X	Y Total Fertility Rate (Average number of children born per woman)	Rank Y	d	d^2
Afghanistan	49	11	4.8	3	8	64
Botswana	60	9	2.8	8	1	1
Burundi	25	15	6.0	2	13	169
Eritrea	29	14	4.3	5	9	81
France	99	2.5	2.0	9.5	–7	49
Ghana	55	10	4.2	6	4	16
Greece	96	4.5	1.3	15.5	–11	121
Hungary	93	7	1.4	13.5	–6.5	42.25
Ireland	100	1	2.0	9.5	–8.5	72.25
Japan	99	2.5	1.4	13.5	–11	121
Lesotho	35	13	3.2	7	6	36
Netherlands	92	8	1.7	12	–4	16
Niger	16	16	7.6	1	15	225
Sierra Leone	37	12	4.6	4	8	64
Spain	96	4.5	1.3	15.5	–11	121
United Kingdom	94	6	1.8	11	–5	25

$\sum d^2 = 1223.5$

Source: Principal Examiner

(i) In the space below, complete the Spearman's rank calculation and comment on the statistical significance of the outcome. Formulae and significance charts are presented in **Resource 2B** on page 11. You should show all calculations clearly. [6]

Examiner Only	
Marks	Remark

r_s = _____

Comment on the statistical significance:

_____

_____

_____

_____

(ii) What **geographical** reasons could be suggested to explain this statistical result?

_____

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_____ [4]

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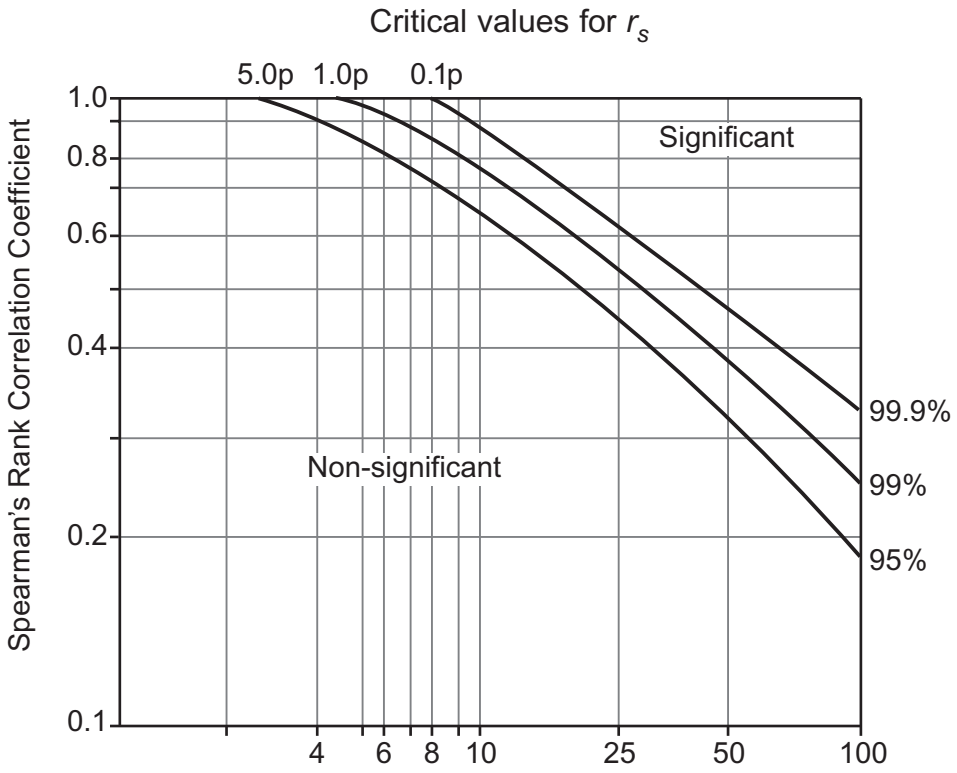
Resource 2B

Spearman's Rank Correlation Equation and Significance Charts

Formula: $$r_s = 1 - \left(\frac{6\Sigma d^2}{n^3 - n} \right)$$

where d = the difference in rank of the values of each matched pair
n = the number of ranked pairs
Σ = the sum of

Spearman's Rank Correlation Significance Graph and Table



Degrees of freedom [Number of ranked pairs (n) – 2]

Significance level

degrees of freedom	0.05 (5%)	0.01 (1%)
8	0.72	0.84
9	0.68	0.80
10	0.64	0.77
11	0.60	0.74
12	0.57	0.71
13	0.54	0.69
14	0.52	0.67
15	0.50	0.65
20	0.47	0.59

Examiner Only	
Marks	Remark

(b) Study **Resource 2C**, a table showing the percentage of the urban population living in informal settlements in countries in South America.

Resource 2C

Country	Percentage of the urban population living in informal settlements (%)
Argentina	16.7
Bolivia	43.5
Brazil	22.3
Chile	8.0
Colombia	13.1
Ecuador	36.0
French Guiana	10.5
Guyana	33.1
Paraguay	17.6
Peru	34.2
Suriname	7.3
Uruguay	8.0
Venezuela	32.0

Source: Principal Examiner

(i) State the **mode** for this data set and explain **one** limitation of using this statistic to summarise the percentage of the urban population living in informal settlements in South America.

[3]

(ii) Using a **choropleth** mapping technique, complete **Resource 2D**, including the key, to show the percentage of the urban population living in informal settlements in South American countries. [7]

Resource 2D

Percentage of the Urban Population Living in Informal Settlements in Countries in South America

(iii) Outline **one** limitation of using a choropleth mapping technique to complete **Resource 2D**.

Examiner Only

Marks	Remark

_____

_____

_____

_____ [2]

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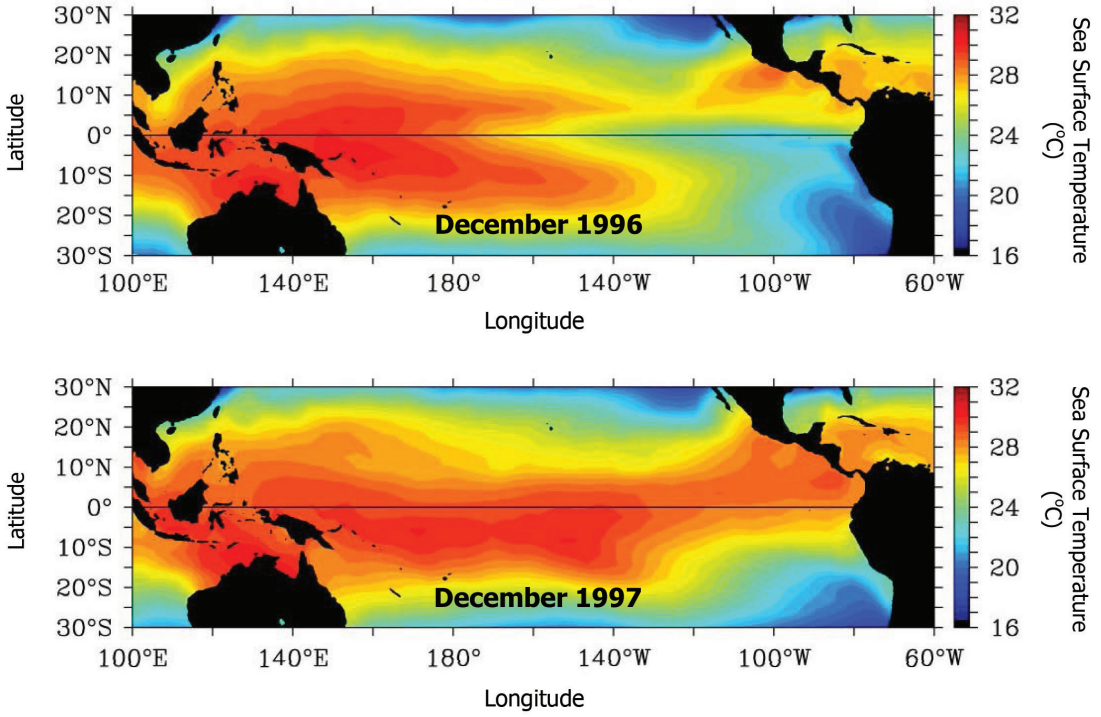
(Questions continue overleaf)

(c) Study **Resource 2E**, two satellite images showing average sea surface temperatures in the Equatorial Pacific Ocean in December 1996 and December 1997, and **Resource 2F**, which shows sea surface temperature anomalies (the difference between long-term average temperatures and those recorded) in December 1997.

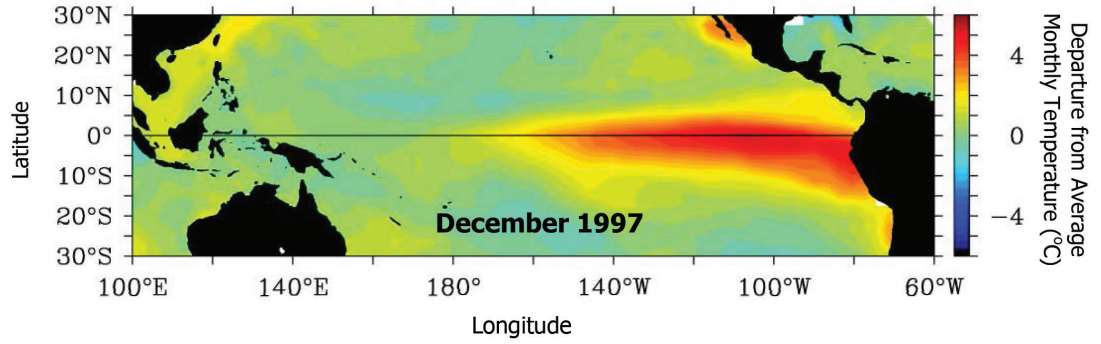
Resource 2E

Sea Surface Temperature



Resource 2F

Sea Surface Temperature Anomalies



(i) A significant El Niño occurred throughout 1997. Using **Resource 2E** and **Resource 2F** describe the changes in sea surface temperature associated with this El Niño in the Equatorial Pacific Ocean.

[4]

(ii) Apart from monitoring sea surface temperatures and weather monitoring, state and explain **two** uses of satellite imagery in geographical studies.

[4]

Examiner Only	
Marks	Remark

Continuation Sheet
(Number your answers clearly if you use this sheet)

Continuation Sheet
(Number your answers clearly if you use this sheet)

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