



Western Australian Certificate of Education Examination, 2014

Question/Answer Booklet

GEOGRAPHY

Stage 3

Please place your student identification label in this box

Student Number: In figures

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In words

Time allowed for this paper

Reading time before commencing work: ten minutes
Working time for paper: three hours

Materials required/recommended for this paper

To be provided by the supervisor

This Question/Answer Booklet
Broadsheet
Multiple-choice Answer Sheet

To be provided by the candidate

Standard items: pens (blue/black preferred), pencils (including coloured), sharpener, correction fluid/tape, eraser, ruler, highlighters

Special items: approved drawing and measuring instruments (i.e. dividers, drawing compass, string, protractor), non-programmable calculators approved for use in the WACE examinations

Section three: Parts A & B

Place ticks (✓) in boxes to indicate the questions you have answered

Part A

Q 28 or Q 29

Part B

Q 30 or Q 31

Number of additional answer booklets used (if applicable):

Important note to candidates

No other items may be taken into the examination room. It is **your** responsibility to ensure that you do not have any unauthorised notes or other items of a non-personal nature in the examination room. If you have any unauthorised material with you, hand it to the supervisor **before** reading any further.

Structure of this paper

Section	Number of questions available	Number of questions to be answered	Suggested working time (minutes)	Marks available	Percentage of exam
Section One: Multiple-choice	20	20	30	20	20
Section Two: Short response	7	7	40	20	20
Section Three Part A: Extended response	2	1	110	60	60
Part B: Extended response	2	1			
Total					100

Instructions to candidates

- The rules for the conduct of Western Australian external examinations are detailed in the *Year 12 Information Handbook 2014*. Sitting this examination implies that you agree to abide by these rules.
- Answer the questions according to the following instructions.
Section One: Answer **all** questions on the separate Multiple-choice Answer Sheet provided. For each question, shade the box to indicate your answer. Use only a blue or black pen to shade the boxes. If you make a mistake, place a cross through that square, then shade your new answer. Do not erase or use correction fluid/tape. Marks will not be deducted for incorrect answers. No marks will be given if more than one answer is completed for any question.

Sections Two and Three: Write your answers in this Question/Answer Booklet.
- Wherever possible, you are encouraged to use relevant, fully labelled sketch maps, diagrams and actual examples to illustrate and support your answers.
- You must be careful to confine your responses to the specific questions asked and to follow any instructions that are specific to a particular question.
- Spare pages are included at the end of this booklet. They can be used for planning your responses and/or as additional space if required to continue an answer.
 - Planning: If you use the spare pages for planning, indicate this clearly at the top of the page.
 - Continuing an answer: If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question that you are continuing to answer at the top of the page.
- You are encouraged to refer to the sources on the Broadsheet to support your answer for any question. The Broadsheet is **not** to be handed in with your Question/Answer Booklet.

See next page

Section One: Multiple-choice

20% (20 Marks)

This section has **20** questions. Answer **all** questions on the separate Multiple-choice Answer Sheet provided. For each question, shade the box to indicate your answer. Use only a blue or black pen to shade the boxes. If you make a mistake, place a cross through that square, then shade your new answer. Do not erase or use correction fluid/tape. Marks will not be deducted for incorrect answers. No marks will be given if more than one answer is completed for any question.

Suggested working time: 30 minutes.

Refer to **Source 1** on the Broadsheet, then answer Questions 1–7.

1. Identify the cultural feature located at GR 825529.
 - (a) war memorial
 - (b) prison
 - (c) secondary school
 - (d) oil storage tanks

2. The latitude and longitude of East Fremantle Oval (GR 836537) is closest to
 - (a) 32°5'S 115°46'E.
 - (b) 115°46'E 32°5'S.
 - (c) 32°3'S 115°46'E.
 - (d) 115°46'E 32°3'S.

3. The straight line distance along High Street from the Round House (GR 811525) to the intersection with East Street (GR 826532) is closest to
 - (a) 350 m.
 - (b) 1.8 km.
 - (c) 3.5 km.
 - (d) 18 km.

4. How long would it take for a person to walk from Rous Head (GR 803528) to the horizontal control point at GR 794527 at an average speed of 5 km/hr?
 - (a) 5 minutes
 - (b) 11 minutes
 - (c) 22 minutes
 - (d) 42 minutes

5. What is the closest bearing of Stirling Highway from the intersection with Queen Victoria Street (GR 821550) to the far end of the Stirling Bridge (GR 828543)?
 - (a) 050°
 - (b) 090°
 - (c) 140°
 - (d) 320°

See next page

6. The area of open water within the Fishing Boat Harbour is closest to
- (a) 5 km².
 - (b) 0.66 km².
 - (c) 2.5 km².
 - (d) 0.33 km².
7. In which direction would a boat travel from Fremantle Bridge (GR 823542) to the harbour exit (GR 806527)?
- (a) west
 - (b) north-west
 - (c) south
 - (d) south-west

Refer to **Sources 1 and 2** on the Broadsheet, then answer Questions 8 and 9.

8. What former land use occupied the location at Point A on the aerial photograph in 1987?
- (a) power station
 - (b) meatworks
 - (c) stockyards
 - (d) quarry
9. Which of the following urban processes **best** accounts for the change in land use at GR 833537?
- (a) agglomeration
 - (b) inertia
 - (c) renewal
 - (d) urban sprawl

Refer to **Source 2** on the Broadsheet, then answer Question 10.

10. Which of the following areas is predicted to have the **most** extensive flooding as a result of sea level rise by 2100?
- (a) area A
 - (b) area C
 - (c) area D
 - (d) area E

Refer to **Source 11** on the Broadsheet, then answer Questions 11 and 12.

11. Which of the following **most** accurately describes the average gradient of the Franz Josef Glacier from GR 840452 to GR 823480?
- (a) 1:4
 - (b) 1:8
 - (c) 1:40
 - (d) 1:80
12. Which of the following **most** accurately describes the type of slope that extends from GR 821539 to GR 818548?
- (a) uniform
 - (b) undulating
 - (c) convex
 - (d) concave

Refer to **Sources 1** and **11** on the Broadsheet, then answer Question 13.

13. Which of the following statements is correct?
- (a) The scale of the Fremantle topographic map is half as large as the scale of the Franz Josef Glacier topographic map.
 - (b) The scale of the Fremantle topographic map is twice as large as the scale of the Franz Josef Glacier topographic map.
 - (c) The scale of the Fremantle topographic map is 5 times as large as the scale of the Franz Josef Glacier topographic map.
 - (d) The scale of the Fremantle topographic map and the Franz Josef Glacier topographic map are the same.

Refer to **Source 13** on the Broadsheet, then answer Question 14.

14. Global oceanic change from 1950 to the present is characterised by
- (a) an increase in Arctic sea ice extent, increase in upper ocean heat content and decrease in average sea level.
 - (b) a decrease in Arctic sea ice extent, decrease in upper ocean heat content and increase in average sea level.
 - (c) a decrease in Arctic sea ice extent, increase in upper ocean heat content and increase in average sea level.
 - (d) an increase in Arctic sea ice extent, increase in upper ocean heat content and decrease in average sea level.

Refer to **Source 8** on the Broadsheet, then answer Question 15.

15. In which of the following decades did Kolkata become a megacity in terms of population?
- (a) 1971–1981
 - (b) 1981–1991
 - (c) 1991–2001
 - (d) 2001–2011

Refer to **Source 10** on the Broadsheet, then answer Question 16.

16. Which of the following areas are likely to experience the greatest change in precipitation between 2081 and 2100?
- (a) polar and some equatorial regions
 - (b) southern parts of South America, Africa and Australia
 - (c) oceans in the southern hemisphere
 - (d) North America and Asia
17. Relatively stable land use patterns within an urban area are **most** likely to be found in
- (a) established residential areas and rural urban fringe.
 - (b) inner mixed zone and central business district.
 - (c) central business district and established residential areas.
 - (d) rural urban fringe and central business district.
18. Which of the following urban problems is **most** likely to occur in Perth's established residential zone?
- (a) urban sprawl
 - (b) urban blight
 - (c) provision of infrastructure and services
 - (d) traffic congestion
19. Which of the following are both greenhouse gases?
- (a) water vapour and oxygen
 - (b) carbon dioxide and methane
 - (c) oxygen and carbon dioxide
 - (d) water vapour and hydrogen
20. Combustion, respiration and photosynthesis are key elements of which natural system?
- (a) the hydrological cycle
 - (b) heat budget
 - (c) atmospheric circulation
 - (d) the carbon cycle

End of Section One

See next page

Section Two: Short response**20% (20 Marks)**

This section has **seven (7)** questions. Answer **all** questions. Write your answers in the spaces provided.

Spare pages are included at the end of this booklet. They can be used for planning your responses and/or as additional space if required to continue an answer.

- Planning: If you use the spare pages for planning, indicate this clearly at the top of the page.
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Suggested working time: 40 minutes.

Question 21**(2 marks)**

Refer to **Sources 1** and **11** on the Broadsheet.

Identify **one** similarity and **one** difference between the site of Fremantle (AR 8152) and the site of the town Franz Josef/Waiiau (AR 8155).

Similarity: _____

Difference: _____

Question 22**(2 marks)**

Refer to **Sources 1** and **2** on the Broadsheet.

Identify **two** specific examples of modifications to the coastline between 1987 and 2013.

One: _____

Two: _____

Question 23

(3 marks)

Refer to **Source 8** on the Broadsheet.

Compare the changes in the populations of the core and the suburbs of Kolkata from 1901 to 2011. Make reference to specific data to support your answer.

Question 24

(4 marks)

Refer to **Source 12** on the Broadsheet.

Describe and account for the impact of climate change on the Franz Josef Glacier.

Question 25

(3 marks)

Describe the viewpoint of **one** stakeholder towards a strategy that aims to minimise the effects of climate change.

Climate change strategy: _____

Relevant stakeholder: _____

Viewpoint towards strategy: _____

Question 26

(4 marks)

Account briefly for the climatic cycles **or** variations that result from any **one** of the following natural processes:

- solar output
- orbit variations
- geological patterns and processes
- volcanoes
- atmospheric gases and chemistry
- El Nino and La Nina effects
- Indian Ocean Dipole
- Pacific decadal cycle
- North Atlantic variations
- Polar ice variation.

Question 27

(2 marks)

Select **one** of the following models:

- concentric
- sector
- multiple nuclei.

Identify **two** examples of how the selected model can be applied to the Perth Metropolitan Area.

Model: _____

One: _____

Two: _____

End of Section Two

Section Three: Extended response**60% (60 Marks)**

This section contains **four (4)** questions. You must answer **two (2)** questions: **one (1)** from **Part A** and **one (1)** from **Part B**. Write your answers on the pages provided.

Spare pages are included at the end of this booklet. They can be used for planning your responses and/or as additional space if required to continue an answer.

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- Continuing an answer: If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question that you are continuing to answer at the top of the page.

Suggested working time: 110 minutes.

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Part A: Answer either Question 28 or Question 29.

Question 28**(30 marks)**Refer to **Source 7** on the Broadsheet to answer (a) below.

- (a) Describe the changes over time to the external morphology of the Perth Metropolitan Area. (8 marks)
- (b) Explain how **two** of the following urban processes are changing the land use characteristics and patterns of the Perth Metropolitan Area:
- urban sprawl
 - planning regulations
 - transportation
 - agglomeration and/or aggregation. (10 marks)
- (c) Discuss the extent to which **one** planning strategy implemented in a **megacity** of your choice reflects the principles of sustainability. (12 marks)

or**Question 29****(30 marks)**

- (a) Describe the internal morphology of the Perth Metropolitan Area. (8 marks)

Refer to **Sources 3, 4, 5 and 6**, their locations on **Source 2** on the Broadsheet, **Source 1**, and your knowledge of the Perth Metropolitan Area to answer (b) below.

- (b) Explain how any **two** of the following processes are changing the land use characteristics and patterns of the Perth Metropolitan Area:
- invasion and succession
 - renewal
 - land use competition
 - inertia. (10 marks)
- (c) For a **megacity** of your choice explain how **two** of the following urban problems result from interactions and processes in the megacity:
- urban sprawl
 - slums and blight
 - water supplies and quality
 - provision of infrastructure and services
 - traffic congestion
 - pollution
 - loss of amenity. (12 marks)

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Part B: Answer either Question 30 or Question 31.

Question 30**(30 marks)**

- (a) Describe the key elements of the heat budget, including the natural greenhouse effect. (8 marks)

Refer to **Source 9** on the Broadsheet and your geographical knowledge to answer (b) below.

- (b) With reference to specific examples, explain how agricultural and urban land uses interact with natural systems to affect climate change. (10 marks)

For either agriculture **or** urban settlement and industry:

- (c) Discuss **one** current or recent strategy to mitigate the adverse effects of climate change. (12 marks)

or

Question 31**(30 marks)**

- (a) Describe key elements of the Earth's atmospheric circulation system. (8 marks)

Refer to **Source 10** on the Broadsheet and your geographical knowledge to answer (b) below.

- (b) With reference to specific examples, explain how climate change alters the location and distribution of natural environments. (10 marks)

For either agriculture **or** urban settlement and industry:

- (c) Discuss **one** way in which human activity has adapted, or may be required to adapt, to climate change. (12 marks)

End of questions

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