Government of **Western Australia**
School Curriculum and Standards Authority

WACE
Western Australian Certificate of Education

Western Australian Certificate of Education Examination, 2012

Question/Answer Booklet

GEOGRAPHY

Stage 3

Please place your student identification label in this box

Student Number: In figures

In words

Section 3: 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): ☐

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 tape/fluid, 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

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.

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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

1. The rules for the conduct of Western Australian external examinations are detailed in the *Year 12 Information Handbook 2012*. Sitting this examination implies that you agree to abide by these rules.

2. 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. Do not erase or use correction fluid/tape. Shade your new answer. 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 answers in this Question/Answer Booklet.

3. Wherever possible, candidates are encouraged to use relevant, fully labelled sketch maps, diagrams and actual examples to illustrate and support your answers.

4. 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.

5. 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(s) that you are continuing to answer at the top of the page.

6. You are encouraged to refer to the sources on the broadsheet to support an answer in any section. The Broadsheet is **not** handed in with your Question/Answer Booklet.

Section One: Multiple-choice **20% (20 Marks)**

This section has **twenty (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. Do not erase or use correction fluid/tape. Shade your new answer. 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: Lake Joondalup topographic map 1987**, to answer Questions 1–9.

1. Which of the following latitude and longitude coordinates is closest to the poultry farm (**GR 850 898**)?

   (a) 31°43'E 115°47'S
   (b) 31°43'S 115°47'E
   (c) 31°43'S 115°47'W
   (d) 31°44'S 115°47'E

2. Which of the following best represents the distance via the road between the Wanneroo City Depot (**GR 857 886**) and the north-east corner of the orchard/vineyard situated on Burns Beach Road (**GR 839 901**)?

   (a) 2.2km
   (b) 2.4km
   (c) 2.7km
   (d) 3km

3. Which of the following provides the most accurate compass direction and bearing when travelling from the road junction at **GR 861 870** to the junction of Wanneroo Road and Clarkson Avenue (**AR 84 89**)?

   (a) NNW 335°
   (b) NNE 022½°
   (c) SSE 157½°
   (d) NW 270°

4. Approximately how long would it take a pedestrian to walk along the road at an average speed of 6km/hr from Neil Hawkins Park (**GR 841 872**) to the junction of Shenton Avenue and Joondalup Drive (**GR 827 877**)?

   (a) 14 minutes
   (b) 17½ minutes
   (c) 20 minutes
   (d) 22½ minutes

5. Which of the following best describes the slope of the terrain on which the vehicular track is situated when travelling from **GR 817 913** to **GR 823 910** located in Neerabup National Park?

(a) generally uniform downward
(b) convex
(c) concave
(d) generally uniform upward

6. Which of the following is closest to the area (in hectares) of Malup Island (**GR 845 880**)?

(a) 1.25 hectares
(b) 2.50 hectares
(c) 12.5 hectares
(d) 25.0 hectares

Note: 1 hectare is 10 000m²

7. What type of land use predominates in **AR 86 87**?

(a) intensive agriculture
(b) light industry
(c) residential
(d) natural bushland

8. Which of the following best identifies the physical feature north of Burns Beach Road located at **GR 834 906**?

(a) power transmission line
(b) Neerabup National Park
(c) swamp
(d) area subject to annual inundation

9. Which of the following best describes the average gradient of the fence line from **GR 836 880** to **GR 840 881**?

(a) 1:2
(b) 1:13
(c) 1:20
(d) 1:130

Refer to **Source 1: Lake Joondalup topographic map 1987 and Source 2: Lake Joondalup aerial photograph 2011**, to answer Questions 10–11.

10. Which of the following statements is correct?

    (a) The scale of the aerial photograph is twice as large as that of the topographic map.
    (b) The scale of the topographic map is 200% larger than the aerial photograph.
    (c) The scales of the aerial photograph and the topographic map are the same.
    (d) The scale of the topographic map is twice as large as that of the aerial photograph.

11. Which of the following best describes the cultural feature at Location **A** on the aerial photograph?

    (a) basketball building
    (b) Neil Hawkins Park
    (c) Wanneroo District Hospital
    (d) City of Wanneroo Offices

Refer to Location **B** on **Source 2: Lake Joondalup aerial photograph 2011 and Source 3: Wanneroo photograph**, when answering Question 12.

12. Which alternative **best** describes the direction in which the camera was pointing when the Wanneroo photograph (**Source 3**) was taken?

    (a) WSW
    (b) WNW
    (c) ESE
    (d) ENE

13. Which best describes the urban process whereby a land use remains at its original location after the initial site advantages have declined or disappeared?

    (a) land use competition
    (b) inertia
    (c) agglomeration
    (d) invasion and succession

Refer to Location **C** on **Source 2: Lake Joondalup aerial photograph 2011 and Source 4: High density housing in Joondalup**, when answering Question 14.

14. Which of the following urban processes best accounts for the presence of high density housing at Location **C**?

    (a) invasion and succession
    (b) renewal
    (c) land use competition
    (d) planning regulations

Refer to **Source 5: Age Population** – **Selected Perth metropolitan localities**, to answer Question 15.

15. Which urban zone in the Perth metropolitan area is best associated with the red bars depicted in the age population bar graph?

(a) established residential zone
(b) inner mixed zone
(c) new growth zone
(d) rural urban fringe

Refer to **Source 6: Directions 2031 and beyond: Metropolitan planning beyond the horizon**, to answer Question 16.

16. Which combination of factors best explains the distribution of the strategic metropolitan centres?

(a) proximity to the Perth CBD and transport accessibility
(b) proximity to the coast and population distribution
(c) population distribution and transport accessibility
(d) proximity to the Perth CBD and proximity to the coast

17. Which **two** variables best differentiate weather from climate?

(a) spatial scale and atmospheric conditions
(b) time and spatial scale
(c) atmospheric conditions and human impact
(d) time and atmospheric conditions

Refer to **Source 7: Global temperature anomaly from the year 500 to the present**, to answer Question 18.

18. Over the total time period shown on the graph, which of the following best describes the global temperature change covered by the instrumental record?

(a) Global temperature moves from the unprecedented low point to the unprecedented high point.
(b) Global temperature moves from the unprecedented low point to a point below the historical high.
(c) Global temperature moves from a point above the historical low to a point below the historical high.
(d) Global temperature moves from a point above the historical low to an unprecedented high point.

Refer to **Source 8: Global temperature anomaly from 800,000 (BP) to the present**, to answer Question 19.

19. Which of the following statements best describes the general pattern shown by the data in **Source 8**?

    (a) Global temperatures generally warm and cool at similar rates.
    (b) Global temperatures tend to remain high for longer periods of time than the time cooler periods remain.
    (c) Global temperatures generally warm more rapidly than they cool.
    (d) Global temperatures generally cool more rapidly than they warm.

20. Which of the following best describes why the greenhouse effect occurs within the earth's atmosphere?

    (a) An increase in pollution in the lower atmosphere as a result of human activity traps ultra violet radiation.
    (b) A decrease in the albedo rate occurs as a result of a reduction in the polar ice caps.
    (c) The development of holes in the ozone layer in both polar regions allows an increase in solar radiation.
    (d) Gases in the lower atmosphere prevent the escape of terrestrial radiation.

End of Section One

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.

Refer to **Source 1: Lake Joondalup topographic map 1987**, to answer Question 21.

Question 21 **(4 marks)**

(a) On the template provided below, construct a cross section between **GR 830 900** and **GR 860 900**. (2 marks)

Note: To assist you to transcribe contour locations, you may remove page 29/30 of this booklet by tearing along the perforations. The page must be re-inserted into the booklet.

Cross section between GR 830 900 and GR 860 900

(b) Label the location of the Mini Golf and Botanic Gardens, and Clarkson Avenue, on the cross section above. (2 marks)

Question 22 **(2 marks)**

Using an example in the Perth metropolitan area, identify and describe the characteristics of a special purpose zone.

Question 23 **(2 marks)**

Identify and discuss briefly how either **one** economic factor **or one** social factor influences planning decisions in the Perth metropolitan area.

Economic factor

or

Social factor

Question 24 **(4 marks)**

Identify **one** major stakeholder group in a megacity of your choice. Explain briefly the impact that planning strategies, which aim to address urban problems, can have upon this group.

Name of megacity:

Name of major stakeholder group and urban problem: (1 mark)

Related planning strategies: (1 mark)

Impact on stakeholder group: (2 marks)

Question 25 **(3 marks)**

Explain the concept of climate change.

Refer to **Source 8: Global temperature anomaly from the year 800,000 years (BP) to the present**, to answer Question 26.

Question 26 **(2 marks)**

Compare the global temperature anomaly pre 450 000 BP with that of the temperature anomaly post 450 000 BP.

Question 27 **(3 marks)**

Identify a stakeholder and outline their view in response to a strategy that aims to minimise the effects of climate change.

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(s) that you are continuing to answer at the top of the page.

Suggested working time: 110 minutes.

Part A – Answer either Question 28 or Question 29

Question 28 **(30 marks)**

Refer to **Source 1: Lake Joondalup topographic map 1987** and **Source 2: Lake Joondalup aerial photograph 2011**, to answer Question 28(a).

(a) Describe and explain how urban processes have contributed to land use change in the area shown on the aerial photograph **west** of Lake Joondalup between 1987 and 2011. (12 marks)

(b) Outline and discuss the problem of the provision of infrastructure and services within the Perth metropolitan area **and** a different urban problem for a megacity. (8 marks)

(c) Identify and discuss how planning strategies address urban problems within the Perth metropolitan area. (10 marks)

or

Question 29 **(30 marks)**

Refer to **Source 1: Lake Joondalup topographic map 1987** and **Source 2: Lake Joondalup aerial photograph 2011**, to answer Question 29(a).

(a) Describe and explain how urban processes have contributed to land use change in the area shown on the aerial photograph **east** of Lake Joondalup between 1987 and 2011. (12 marks)

(b) Outline and discuss the problem of traffic congestion within the Perth metropolitan area **and** a different urban problem for a megacity. (8 marks)

(c) Discuss the extent to which urban planning strategies for the Perth metropolitan area, including **Source 6: Directions 2031 and beyond: Metropolitan planning beyond the horizon**, reflect the principles of sustainability. (10 marks)

Part B – Answer either Question 30 or Question 31

Question 30 **(30 marks)**

(a) Describe how any **two** of the following natural systems interact to influence the earth's climate:
- hydrological cycle
- atmospheric circulation
- carbon cycle
- heat budget. (10 marks)

(b) Explain how the location and distribution of natural environments alter as a result of climate change. (8 marks)

Refer to **one** of the following human activities to answer Question 30(c) below:
- agriculture
  or
- urban settlement and industry.

(c) Identify **two** strategies, that have been either implemented or proposed, and discuss how they aim to reduce the adverse effects of climate change for your selected human activity. (12 marks)

or

Question 31 **(30 marks)**

(a) Account for climatic cycles and variations as a result of any **two** of the following natural processes:
- solar output
- orbit variations
- geological patterns and processes
- volcanoes
- atmospheric gases and chemistry
- El Nino and La Nina effects
- Pacific decadal cycle
- North Atlantic variations
- polar ice variations. (10 marks)

(b) Examine how climate change influences the spatial patterns of agriculture **or** urban settlements and industry. (8 marks)

Refer to **one** of the following human activities to answer Question 31(c) below:
- agriculture
  or
- urban settlement and industry.

(c) For your selected human activity, discuss how it has adapted or may be required to adapt to climate change. (12 marks)

End of questions

Question number: _____

Question number: _____

Question number: _____

Question number: _____

Question number: _____

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Additional working space

Additional working space

You may tear along the perforations (to use this page to transcribe contour locations for Question 21).
Insert this page back into the Question/Answer Booklet once you have completed Question 21.

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Additional working space

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