



ATAR course examination, 2019

Question/Answer booklet

GEOGRAPHY

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Place one of your candidate identification labels in this box.
Ensure the label is straight and within the lines of this box.
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WA student number: In figures

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In words

Time allowed for this paper

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

Number of additional
answer booklets used
(if applicable):

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 this examination

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 material. 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 examination
Section One Multiple-choice	20	20	30	20	20
Section Two Short response	11	11	70	40	40
Section Three Extended response Part A: Unit 3	2	1	40	20	20
Part B: Unit 4	2	1	40	20	20
Total					100

Instructions to candidates

- The rules for the conduct of the Western Australian external examinations are detailed in the *Year 12 Information Handbook 2019*. Sitting this examination implies that you agree to abide by these rules.
- Write your answers in this Question/Answer booklet preferably using a blue/black pen. Do not use erasable or gel pens.
- 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. Do not use erasable or gel pens. 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.

Section Two: Answer all questions. Write your answers in this Question/Answer booklet.

Section Three: Consists of two parts, each with two questions. You must answer one question from each part. Tick the box next to each question you are answering. 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 answers to the specific questions asked and to follow any instructions that are specific to a particular question.
- Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.
- 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. Do not use erasable or gel pens. 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**: Noarlunga topographic map 2001 to answer Questions 1 to 9.

1. The scale of the Noarlunga topographic map as a statement in words is 1 centimetre represents
 - (a) 5 kilometres.
 - (b) 500 metres.
 - (c) 5000 centimetres.
 - (d) 50 000 metres.

2. The cultural feature located at GR 758004 is a
 - (a) cemetery.
 - (b) church.
 - (c) police station.
 - (d) post office.

3. The latitude and longitude of the effluent pond located in AR 7305 is
 - (a) 35° 10'S 138° 31'E.
 - (b) 138° 31'S 35° 10'E.
 - (c) 35° 12'S 138° 29'W.
 - (d) 35° 05'S 138° 74'E.

4. Identify the landform feature found at GR 733041.
 - (a) escarpment
 - (b) ridge
 - (c) spur
 - (d) valley

5. The direction and compass bearing to be followed when travelling from the intersection at GR 799013 to the intersection at GR 778000 would be
 - (a) NE 60°.
 - (b) NNE 20°.
 - (c) SSW 200°.
 - (d) WSW 240°.

See next page

6. The distance travelled in a southerly direction along the bicycle track from its intersection with States Road in AR 7513 to the bridge over the Onkaparinga River (AR 7204) is closest to
- (a) 10 kilometres.
 - (b) 18 kilometres.
 - (c) 20 kilometres.
 - (d) 28 kilometres.
7. The gradient of the slope from the base of the radio mast at GR 757981 directly west to the coastline is closest to
- (a) 1:70.
 - (b) 1:85.
 - (c) 1:115.
 - (d) 1:120.
8. When walking east along northing 03 from GR 750030 to the small dam (GR 757030) you would be travelling
- (a) downhill across a concave slope.
 - (b) uphill across a convex slope.
 - (c) downhill across a uniform slope.
 - (d) uphill across a uniform slope.
9. The area of the flora and fauna reserve at GR 795033 is closest to
- (a) 18 hectares.
 - (b) 45 hectares.
 - (c) 450 hectares.
 - (d) 1 800 hectares.

Note: One hectare is 10 000 m²

Refer to **Source 1**: Noarlunga topographic map 2001 and **Source 2**: Noarlunga aerial photograph 2017 to answer Questions 10 to 12.

10. Which of the following statements is correct?
- (a) The scale of the aerial photograph is larger than that of the topographic map.
 - (b) The scales of the aerial photograph and the topographic map are the same.
 - (c) The scale of the topographic map is larger than that of the aerial photograph.
 - (d) The scale of the topographic map is twice as large as that of the aerial photograph.

11. Identify the feature found at the point marked A on **Source 2**.
- (a) caravan park
 - (b) cemetery
 - (c) primary school
 - (d) shopping centre
12. The grid reference of the cultural feature found at the point marked B on **Source 2** is
- (a) GR 739996.
 - (b) GR 739014.
 - (c) GR 760995.
 - (d) GR 805011.

Refer to **Source 1**: Noarlunga topographic map 2001 and **Source 3**: Maslin Beach ground photograph 2019 to answer Question 13.

13. The photograph in **Source 3** was taken at GR 699984. In which direction was the photographer facing?
- (a) south-east
 - (b) north
 - (c) south
 - (d) west

Refer to **Source 1**: Noarlunga topographic map 2001 and **Source 4**: Old Noarlunga ground photograph 2019 to answer Question 14.

14. The photograph in **Source 4** was taken looking west-south-west at GR 720041. The process of land cover change that has occurred between **Source 1** and **Source 4** is expansion of
- (a) agriculture.
 - (b) deforestation.
 - (c) industry.
 - (d) urban settlement.
15. Land cover change is best defined as the
- (a) removal of natural vegetation for human purposes.
 - (b) changes that have taken place to both natural and human land uses due to human actions.
 - (c) changes that have taken place in natural environments due to natural and/or human causes.
 - (d) removal of forest biomes for the purpose of food production.

16. Human factors that can facilitate differences in land cover changes between countries include
- (a) government policy and seasonal temperature variations.
 - (b) government policies and land ownership.
 - (c) institutional arrangements and rainfall variability.
 - (d) land ownership and natural hazards.

Refer to **Source 5**: The results of change due to human activity on ecosystems and climate to answer Question 17.

17. The arrow indicating that climate change results in further biodiversity loss is an illustration of a
- (a) causal relationship.
 - (b) central tendency.
 - (c) proportional circle.
 - (d) statistical association.
18. Urban renewal is **best** described as the
- (a) building of new residential, commercial or community based developments on greenfield sites.
 - (b) buying and renovation of houses in deteriorated urban neighbourhoods by upper or middle-income earners.
 - (c) maintenance and preservation of historic buildings in inner city areas, often involving heritage listing.
 - (d) planned rehabilitation of city areas by replacing and upgrading dilapidated buildings, infrastructure and facilities.
19. Which of the following sets of challenges are faced by both rural and remote places and Australian metropolitan and regional centres?
- (a) economic restructuring, employment, social inclusion and exclusion, and urban sprawl
 - (b) economic restructuring, isolation and remoteness, population loss and housing
 - (c) economic restructuring, employment, social inclusion and exclusion, and housing
 - (d) economic restructuring, transport and congestion, urban sprawl and employment

Refer to **Source 8**: Do more people live in urban or rural areas? to answer Question 20.

20. Approximately how many years after the world's More Developed Regions reached an urban population level of 60 per cent are the world's Less Developed Regions projected to reach this same level?
- (a) 20
 - (b) 40
 - (c) 60
 - (d) 80

End of Section One

See next page

Section Two: Short response

40% (40 Marks)

This section has **11** questions. Answer **all** questions. Write your answers in the spaces provided.

Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 70 minutes.

Refer to **Source 1**: Noarlunga topographic map 2001 to answer Questions 21 and 22.

Question 21

(3 marks)

- (a) Identify **one** site feature of the built-up area of Maslin Beach at AR 7098. (1 mark)

- (b) Describe **one** situation feature of the built-up area of Maslin Beach at AR 7098. (2 marks)

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Question 22

(2 marks)

Calculate how long (in minutes and seconds) a car travelling at an average speed of 72 kilometres per hour will take to go from the intersection of Victor Harbor Road and Main Road (GR 745012), south along Main Road to Willunga. Show your method of calculation and your answer.

Calculation: _____

Answer: _____

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Refer to **Source 1**: Noarlunga topographic map 2001 and **Source 2**: Noarlunga aerial photograph 2017 to answer Question 23.

Question 23

(5 marks)

- (a) Locate and describe **one** example of land use change that has occurred in the area covered by **Source 2** between 2001 and 2017. (3 marks)

- (b) Describe how the land use change identified in part (a) has been influenced by the natural and/or cultural features in this area. (2 marks)

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Refer to **Source 5**: The results of change due to human activity on ecosystems and climate to answer Question 24.

Question 24

(6 marks)

With specific reference to **Source 5**, explain **two** of the changes that result from the negative impacts of human behaviour/activities on ecosystems and climate.

One: _____

Two: _____

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Question 25

(2 marks)

Identify **one** environmental variable and **one** socio-economic variable that could be used in spatial modelling to project changes in land cover.

Environmental variable: _____

Socio-economic variable: _____

Question 26

(2 marks)

Define the term 'natural biome'.

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Refer to **Source 6**: Satellite image of forest cover clearance, Borneo (Indonesia and Malaysia) 1973–2010 to answer Question 27.

Question 27

(4 marks)

With specific reference to **Source 6**, describe the nature and extent of land cover change that can be observed to have taken place on the island of Borneo between 1973 and 2010.

Question 28

(2 marks)

Describe the process of invasion and succession occurring in urban areas.

Refer to **Source 7**: The growth of worldwide rural and urban population 1960–2016 to answer Question 29.

Question 29

(4 marks)

With specific reference to **Source 7**, describe **two** changes that have occurred as the process of urbanisation has taken place between 1960 and 2016.

One : _____

Two: _____

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Question 30

(6 marks)

Explain **one** implication of changes in the level of urbanisation for world population growth and **one** implication for human wellbeing.

World population growth: _____

Human wellbeing: _____

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Refer to **Source 9**: Age and sex distribution (%) capital cities and rest of Australia, June 2006 and June 2017 to answer Question 31.

Question 31

(4 marks)

- (a) With specific reference to the June 2006 population pyramid, describe **one** difference in the age and sex distributions between the capital cities and the rest of Australia.

(2 marks)

- (b) With specific reference to the June 2006 and June 2017 population pyramids, describe **one** change that has occurred between 2006 and 2017 in the distribution of the population in the 20 to 34-year-old age groups.

(2 marks)

End of Section Two

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See next page

Section Three: Extended response**40% (40 Marks)**

Section Three consists of **two** parts, Part A: Unit 3 and Part B: Unit 4.

Part A: Unit 3 consists of Questions 32 and 33. Part B: Unit 4 consists of Questions 34 and 35. Answer **one** question from Part A: Unit 3 and **one** question from Part B: Unit 4.

Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Part A: Unit 3**20% (20 Marks)**

Choose **either** Question 32 **or** Question 33.

Indicate the question you will answer by ticking the box next to the question. Write your answer on pages 18–22. When you have completed Part A: Unit 3, turn to page 23.

Suggested working time: 40 minutes.

Question 32**(20 marks)**

- (a) Choose one of the natural systems listed below and describe the ways in which it interacts with **two** of the other natural systems listed to influence the Earth's climate.

- heat budget
- hydrological cycle
- carbon cycle
- atmospheric circulation

or

Describe **two** key elements of ecosystem structure and dynamics from the five listed below.

- biotic and abiotic elements
- food chains and food webs
- biomass
- trophic levels
- flows of matter and energy

(8 marks)

- (b) With reference to specific examples, discuss **two** ways in which human activity has adapted, or may be required to adapt, to **either** global climate change **or** loss of biodiversity. **(12 marks)**

OR**See next page**

**Question 33****(20 marks)**

(a) Describe the effects of climate change on land cover in any **two** of the following types of biomes.

- vegetation
- ice sheets
- glaciers
- coastal systems and coral reefs
- agriculture
- urban settlements and industry

or

Describe the effects of biodiversity loss on any **two** of the following elements, in natural or human biomes.

- ecosystem services
- ecosystem species
- ecosystem diversity
- genetic diversity
- loss of human foods
- loss of medicinal plants

(8 marks)

(b) With reference to specific examples, discuss **two** current and/or proposed strategies implemented to mitigate the adverse effects of **either** global climate change **or** loss of biodiversity. (12 marks)

Part B: Unit 4**20% (20 Marks)**

Choose **either** Question 34 **or** Question 35.

Indicate the question you will answer by ticking the box next to the question. Write your answer on the pages provided.

Suggested working time: 40 minutes.

Question 34**(20 marks)**

- (a) Describe the internal and external morphology of **either** metropolitan Perth **or** a regional urban centre in Western Australia. (8 marks)

To answer Question 34(b), refer to both a planning strategy adopted to address **one** challenge facing **either** metropolitan Perth **or** a regional urban centre in Western Australia **and** a planning strategy adopted to address **one** challenge facing a megacity.

- (b) Assess the extent to which these strategies have enhanced the sustainability and liveability of these places. (12 marks)

OR**Question 35****(20 marks)**

- (a) Describe the internal and external morphology of a megacity. (8 marks)

To answer Question 35(b), refer to both a planning strategy adopted to address **one** challenge facing **either** metropolitan Perth **or** a regional urban centre in Western Australia **and** a planning strategy adopted to address **one** challenge facing a megacity.

- (b) Evaluate the extent to which these strategies have been, or could be, informed by the concept of sustainability. (12 marks)

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