



ATAR course examination, 2023

Question/Answer booklet

GEOGRAPHY

Place one of your candidate identification labels in this box.
Ensure the label is straight and within the lines of this box.

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), up to three calculators, which do not have the capacity to create or store programmes or text, are permitted in this ATAR course 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.

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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 examination
Section One Multiple-choice	20	20	30	20	20
Section Two Short response	9	9	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 2023: Part II Examinations*. 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. 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 preferably using a blue/black pen. Do not use erasable or gel pens.

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 preferably using a blue/black pen. Do not use erasable or gel pens.
- 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**: Townsville topographic map 2021 to answer Questions 1 to 11.

1. The scale of the Townsville topographic map, as a written statement, is one centimetre represents
 - (a) 500 metres.
 - (b) 50 000 metres.
 - (c) 1.0 kilometre.
 - (d) 2.0 kilometres.

2. The length of Ingham Road from Crowder Street (GR 761698) east to Sturt Street is closest to
 - (a) 1.8 kilometres.
 - (b) 3.4 kilometres.
 - (c) 6.8 kilometres.
 - (d) 14 kilometres.

3. The bearing of the railway line from the closed railway station at GR 815640 to the bridge at GR 805678 is
 - (a) 14 degrees.
 - (b) 166 degrees.
 - (c) 196 degrees.
 - (d) 346 degrees.

4. The landform feature located at GR 869615 is a
 - (a) cliff.
 - (b) hill.
 - (c) ridge.
 - (d) valley.

5. Identify the hydrological feature located at GR 870650.
 - (a) subject to inundation
 - (b) swamp
 - (c) non-perennial river
 - (d) settling pond

See next page

6. The cultural feature located at GR 805638 is a
- (a) pond.
 - (b) roundabout.
 - (c) racecourse.
 - (d) fire station.
7. The average gradient from the peak of Mt Matthew (AR 9061) to Point A at the coastline is closest to
- (a) 1:6.
 - (b) 1:9.
 - (c) 1:15.
 - (d) 1:30.
8. Which of the following represents the latitude and longitude of the caravan park at GR 828640?
- (a) 146°50'E 19°19'S
 - (b) 19°19'S 146°50'E
 - (c) 146°51'E 19°18'S
 - (d) 19°64'S 146°83'E
9. The area of the AMH Townsville Abattoir (AR 8461 and AR 8462) is closest to
- (a) 0.4 square kilometres.
 - (b) 0.8 square kilometres.
 - (c) 1.5 square kilometres.
 - (d) 3 square kilometres.
10. How long would it take a freight train moving at an average speed of 45 km/h to travel from the closed station at GR 806690 to the closed station at GR 851606?
- (a) 8 minutes
 - (b) 11 minutes
 - (c) 15 minutes
 - (d) 45 minutes
11. Cluden Park racecourse located at AR 8163 is situated
- (a) at 19°20'S 146°50'E.
 - (b) at the intersection of Stuart Drive and Flinders Highway.
 - (c) on relatively steep land.
 - (d) 5 km north-east of Mt Stuart.

Refer to **Source 1**: Townsville topographic map 2021 and **Source 2**: Townsville Central Business District photograph 2005 to answer Questions 12 to 14.

12. In which direction was the drone camera facing when taking the photograph?
- (a) west south-west
 - (b) east north-east
 - (c) south south-west
 - (d) north north-east
13. **Source 2**: Townsville Central Business District photograph 2005 is an example of
- (a) a ground level photograph.
 - (b) a satellite image.
 - (c) an oblique aerial photograph.
 - (d) a vertical aerial photograph.
14. Which statement correctly describes a site feature of the Townsville Central Business District?
- (a) on the lower slopes of Castle Hill on flat to gently sloping land between 0 m to 50 m asl
 - (b) on a steep and undulating riverbank with rainforest between 0 m to 250 m asl
 - (c) opposite a beach facing the Pacific Ocean
 - (d) between the small boat harbour and the river mouth

Refer to **Source 3**: Townsville population pyramids 2001 and 2021 to answer Question 15.

15. Between 2001 and 2021, the population of Townsville
- (a) decreased and showed a decline in numbers of 65 to 79 year olds.
 - (b) increased but showed a decline in numbers of 70 to 74 year olds.
 - (c) decreased but showed an increase in the numbers of 0 to 14 year olds.
 - (d) increased and showed an increase in the numbers of 20 to 34 year olds.
16. Sustainability is defined as
- (a) addressing the wants of the world's population through selective economic changes, environmental adaptations and social improvements.
 - (b) meeting the needs of current and future generations through simultaneous environmental, social and economic adaptation and improvement.
 - (c) preserving the current levels of resource use to ensure that exploitation rates do not increase and consumption patterns can be maintained.
 - (d) stabilising the rate of population increase so that developing nations can enjoy an increased standard of living, and improved air and environmental quality.

Refer to **Source 4a**: Change in the area used for grazing between 1992–93 and 2005–06 in Australia to answer Question 17.

17. Which of the following statements **most** accurately reflects changes in the area used for grazing between 1992–93 and 2005–06 in Australia shown in Source 4a?
- (a) Tasmania's most extensive change in land area used for grazing was a 0% to –10% reduction.
 - (b) Southwest of Western Australia's most extensive change in land area used for grazing was an increase above 10%.
 - (c) Central Australia showed no change in land area used for grazing.
 - (d) New South Wales had more areas that experienced a 10% and above increase in land area used for grazing compared to Western Australia.

Refer to **Source 5**: Liveability in metropolitan and regional Australia and Western Australia 2022 to answer Question 18.

18. Which of the following statements is correct?
- (a) Liveability levels are higher in regional Australia than in metropolitan Australia.
 - (b) Access to natural environment is valued more in metropolitan Australia than in regional Australia.
 - (c) A lack of road congestion is valued less in metropolitan Australia than in regional Australia.
 - (d) A prosperous economy is valued equally in metropolitan Australia and in regional Australia.
19. Urbanisation is defined as the
- (a) increasing proportion of a population living in urban areas of a country.
 - (b) increase in the absolute size of the urban population of a country.
 - (c) rapid growth of the largest towns and cities in a country.
 - (d) movement of urban employment to rural areas as a result of technological advances.

Refer to **Source 6**: Number of people living in urban slum households, World, 2000 to 2018 to answer Question 20.

20. Which of the following statements is correct?
- (a) In the year 2008, approximately 3.5 billion people were living in urban slums and 1 billion were not living in urban slums.
 - (b) The proportion of the urban population living in slums has decreased from approximately 40% to 30%.
 - (c) The proportion of the urban population not living in slums has decreased from approximately 40% to 30%.
 - (d) The urban population not living in slums is stable whereas the urban population living in slums is unstable.

End of Section One

See next page

Section Two: Short response**40% (40 Marks)**

This section has **nine** 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.

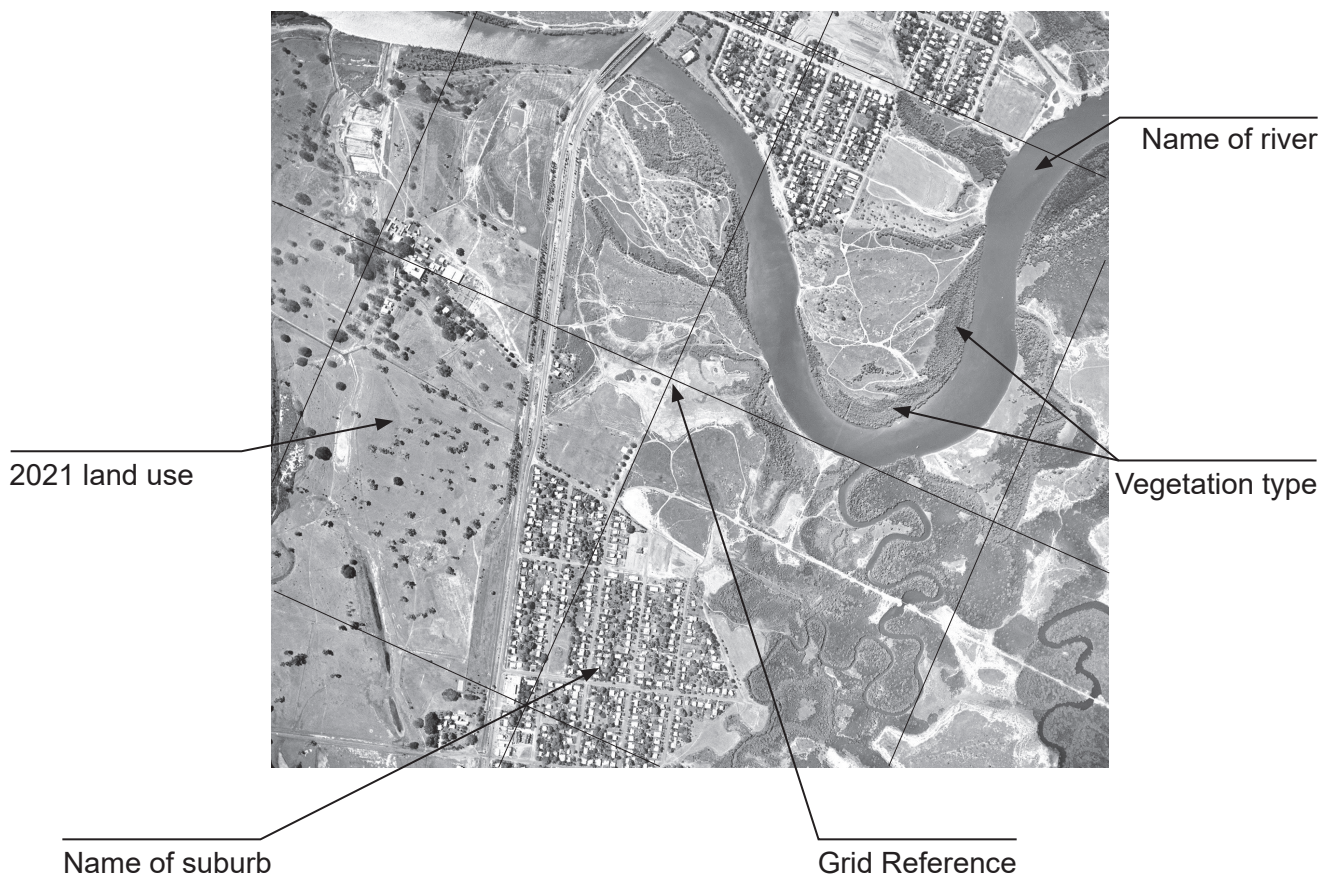
Refer to **Source 1: Townsville topographic map 2021 and Townsville aerial photograph 1995** (below) to answer Question 21.

Question 21**(6 marks)**

(a) Label the following features on the aerial photograph below.

(5 marks)

Townsville aerial photograph 1995



(b) Identify whether **Source 1: Townsville topographic map 2021** or the Townsville aerial photograph 1995 (above) has the larger scale.

(1 mark)

See next page

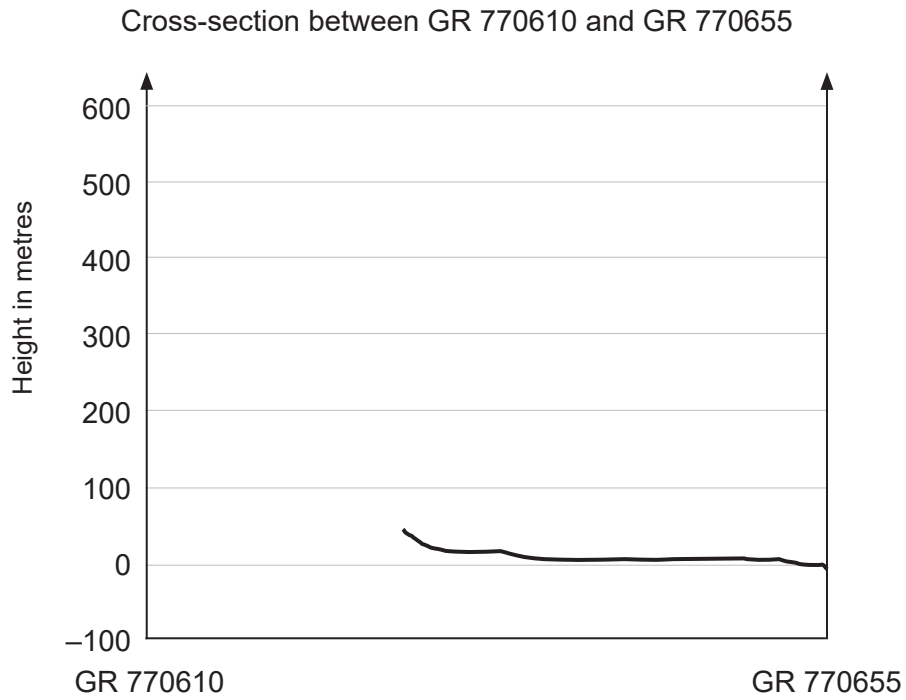
Refer to **Source 1**: Townsville topographic map 2021 to answer Question 22.

Question 22

(6 marks)

- (a) Complete the cross-section extending from GR 770610 to GR 770655. (2 marks)

Note: To assist you to transcribe contour locations, you may remove page 29 of this booklet by tearing along the perforations.



- (b) Annotate the following features on the cross-section above. (3 marks)

- University Road
- Lavarack Golf Course
- Residential area

- (c) Identify the overall shape of the slope from the peak of Mt Stuart to GR 770628. (1 mark)

Question 23

(2 marks)

Define the concept of climate change.

Refer to **Source 4a**: Change in the area used for grazing between 1992–93 and 2005–06 in Australia and **Source 4b**: Change in the area used for cropping between 1992–93 and 2005–06 in Australia to answer Question 24.

Question 24

(3 marks)

With specific reference to **Sources 4a** and **4b**, describe the expansion of agriculture as a process of land cover change.

DO NOT WRITE IN THIS AREA AS IT WILL BE CUT OFF

Question 25

(6 marks)

Outline how **two** of the following factors account for difference in land cover change between **two** countries:

- government policy
- ideology
- land ownership
- type of economy
- culture.

One: _____

Two: _____

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Question 26

(3 marks)

Explain **one** of the following impacts of land cover change:

- changes to the water cycle
- soil erosion and degradation
- loss of habitat and biodiversity
- loss of ecosystem services
- the degradation of aquatic and marine environments
- urban heat islands.

Impact: _____

Question 27

(4 marks)

Outline **one** changing age demographic characteristic and **one** changing gender demographic characteristic in urban or rural places in Australia.

Age: _____

Gender: _____

Question 28

(6 marks)

Describe **one** historical and **one** environmental factor that has contributed to the spatial distribution of urban and rural places in Australia. Provide an example of each to support your answer.

Historical factor:

Environmental factor:

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Refer to **Source 5**: Liveability in metropolitan and regional Australia and Western Australia 2022 to answer Question 29.

Question 29

(4 marks)

Identify **one** liveability factor and describe the patterns of its performance within **both** metropolitan Perth and regional Western Australia.

Liveability factor: _____

Metropolitan Perth

Regional Western Australia

End of Section Two

See next page

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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 30 and 31. Part B: Unit 4 consists of Questions 32 and 33. 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.

Suggested working time: 80 minutes.

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

Choose **either** Question 30 **or** Question 31.

Indicate the question you will answer by ticking the box next to the question. Write your answer on pages 15–19. When you have completed Part A: Unit 3, turn to page 20.

Suggested working time: 40 minutes.

Question 30**(20 marks)**

- (a) Describe the interrelationships between land cover change and climate, including changes to surface reflectivity (albedo) and the process of natural carbon sequestration.

or

Describe the interrelationships between land cover change and biodiversity loss, including shifting ecological boundaries, evolutionary diversification and species extinction.

(8 marks)

- (b) Explain **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

Question 31**(20 marks)**

- (a) Describe **one** present or projected impact of either climate change **or** biodiversity loss in **one** natural and **one** anthropogenic environment. (8 marks)

- (b) Explain **two** strategies designed to address the impacts of land cover change on local and/or regional environments. (12 marks)

See next page

Part B: Unit 4

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 the pages provided.

Suggested working time: 40 minutes.

Question 32**(20 marks)**

- (a) Explain the causes and impacts of **one** challenge facing metropolitan Perth **or** a regional urban centre in Western Australia. (8 marks)
- (b) Evaluate **one** planning strategy used to address **one** challenge facing a megacity, using the concept of sustainability. (12 marks)

or

Question 33**(20 marks)**

- (a) Explain the causes and impacts of **one** challenge facing a megacity. (8 marks)
- (b) Evaluate **one** planning strategy used to address **one** challenge facing metropolitan Perth **or** a regional urban centre in Western Australia, using the concept of sustainability. (12 marks)

End of questions

You may tear along the perforations to use this page to transcribe contour locations for Question 22.

This page is to be used for transcribing contours only

You may tear along the perforations to use this page to transcribe contour locations for Question 22.

This page is to be used for transcribing contours only

ACKNOWLEDGEMENTS

Question 21

Adapted from: Department of Resources. (1995). [Aerial photograph of Townsville-Stuart Creek]. Retrieved June, 2023, from:
<https://qimagery.information.qld.gov.au/?sid=air-photo-where&sval=NAME%3D%27QAP5385051%27>
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