



ATAR course examination, 2018

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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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	10	10	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 2018*. 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**: Busselton topographic map 1969 to answer Questions 1 to 6.

1. The scale of the Busselton topographic map is
 - (a) 1 centimetre equals 1 kilometre.
 - (b) 1 centimetre represents 1 kilometre.
 - (c) 1 centimetre equals 100 metres.
 - (d) 1 centimetre represents 1 hectare.

2. The length of the Busselton Jetty is closest to
 - (a) 17 metres.
 - (b) 170 metres.
 - (c) 1700 metres.
 - (d) 17 000 metres.

3. Which of the following **best** represents the landform feature located in AR 5762?
 - (a) escarpment
 - (b) ridge
 - (c) secondary road
 - (d) valley

4. Which **best** represents the latitude and longitude of the abattoir west of Busselton Airfield near easting 44?
 - (a) 33° 40'S 115° 19'E
 - (b) 115° 19'W 33° 40'S
 - (c) 33° 40'S 116° 20'E
 - (d) 115° 19'E 33° 40'S

5. The direction and compass bearing of the Busselton Railway Station (GR 466751) to Four Mile Hill (GR 506717) is closest to
 - (a) 45° NW.
 - (b) 135° SE.
 - (c) 225° SE.
 - (d) 315° NW.

See next page

6. The **most** likely reason for the lack of land cover change in the area south-east from GR 490600 to GR 609670 is
- (a) it lacks water resources.
 - (b) because its biodiversity is being protected.
 - (c) it lacks accessibility.
 - (d) the area is a steep, undulating landscape with dense forest.

Refer to **Source 2**: Busselton photograph 2016 to answer Questions 7 and 8.

7. The area of the Lithium Mine 1 is closest to
- (a) 2 hectares.
 - (b) 20 hectares.
 - (c) 200 hectares.
 - (d) 20 km².

Note: One hectare is 10 000 m²

8. A car driving at an average speed of 80 km/h will be able to traverse the length of the Busselton Bypass in approximately
- (a) 5 ½ minutes.
 - (b) 7 ½ minutes.
 - (c) 11 minutes.
 - (d) 15 minutes.

Refer to **Source 1**: Busselton topographic map 1969 and **Source 2**: Busselton photograph 2016 to answer Questions 9 and 10.

9. Which of the following **best** represents the approximate distance and direction of the movement of Busselton Airfield from its location in 1969 to its new location in 2016?
- (a) 6 km ESE
 - (b) 6 km WNW
 - (c) 10 km ESE
 - (d) 10 km WNW
10. Which of the following **best** describes the dominant land use in 2016 between northing 640 and northing 740?
- (a) mining
 - (b) dense forest
 - (c) medium scrub
 - (d) agriculture

Refer to **Source 2**: Busselton photograph 2016 and **Source 3**: Busselton photograph insert 2016 to answer Question 11.

11. The scale of **Source 3** is

- (a) 1: 10 000
- (b) 1: 20 000
- (c) 1: 25 000
- (d) 1: 50 000

Refer to **Source 1**: Busselton topographic map 1969 and **Source 3**: Busselton photograph insert 2016 to answer Question 12.

12. Which of the following would be **most** affected by a sea level rise of 1 metre by 2100 in the area designated within **Source 3**?

- (a) coastline
- (b) estuary
- (c) residential areas
- (d) major transport links

Refer to **Source 4**: Busselton coastline 2016 to answer Question 13.

13. Which type of photograph **best** describes **Source 4**: Busselton coastline 2016?

- (a) satellite
- (b) aerial
- (c) ground level
- (d) oblique

Refer to **Source 1**: Busselton topographic map 1969 and **Source 4**: Busselton coastline 2016 to answer Question 14.

14. Which **best** describes the direction from which the photograph was taken?

- (a) the north looking south
- (b) the south looking north
- (c) the west looking east
- (d) the east looking west

15. Which of the following definitions **best** describes climate change?

- (a) the long-term permanent shift in the mean and range of some or all parts of the weather conditions
- (b) a change in global temperature over a long period of time
- (c) a temporary shift in weather conditions at the global scale
- (d) a shift in climatic patterns such as El Niño experienced over a region

See next page

Refer to **Source 5**: World distribution of natural vegetation, croplands, pastures and rangelands to answer Questions 16 and 17.

16. The majority of the world's croplands are located in the
- (a) temperate latitudes of the Northern Hemisphere.
 - (b) equatorial zone.
 - (c) temperate latitudes of the Southern Hemisphere.
 - (d) east coastal areas of the continents.
17. Which of the following natural vegetation biomes have been **most** extensively affected by the establishment of croplands, pastures and rangelands?
- (a) tropical forest and savanna
 - (b) grassland/shrubland and savanna
 - (c) boreal forest and grassland/shrubland
 - (d) semi-desert/desert/ice and grassland/shrubland
18. Urbanisation can be **best** described as
- (a) an increase in the population of urban places, resulting in urban growth.
 - (b) the movement of people from urban places to rural places as a result of population growth.
 - (c) an increase in the area of urban places as a result of an increase in urban population.
 - (d) an increase in the proportion of the population living in urban places compared with rural places.

Refer to **Source 8**: Percentage urban and urban agglomerations by size and class to answer Questions 19 and 20.

19. Which of the following regions are forecast to experience the largest increase in the number of cities with over 10 million people from 1990 to 2030?
- (a) Africa, China and the Indian subcontinent
 - (b) Australia, Africa and Europe
 - (c) North America, South America and China
 - (d) South America, Australia and the Indian subcontinent
20. Which of the following is the **best** conclusion that can be drawn from an analysis of the two maps?
- (a) Between 1990 and 2030, China and India will experience large and rapid population growth.
 - (b) Stable urbanisation rates in North America and Africa between 1990 and 2030 will lead to an increase in the average age of the population.
 - (c) There will continue to be a large net movement of people from rural China to its urban places between 1990 and 2030.
 - (d) The large increase in the number of cities with over 10 million people in North America will result from net migration from other continents between 1990 and 2030.

End of Section One

See next page

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

This section has **10** questions. Answer **all** questions. Write your answers in the spaces provided.

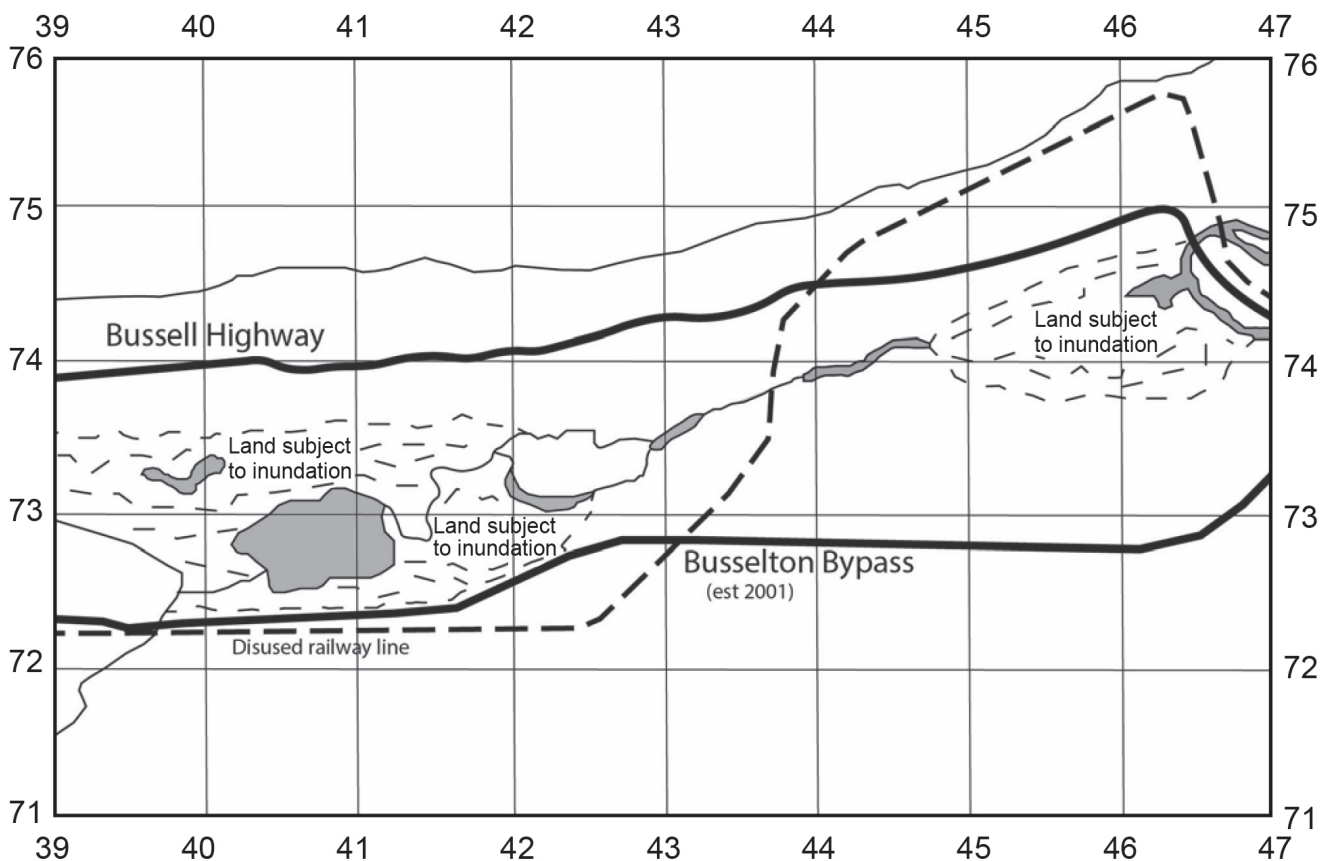
Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 70 minutes.

Refer to **Source 1**: Busselton topographic map 1969 and **Source 2**: Busselton photograph 2016 to answer Question 21.

Question 21**(4 marks)**

- (a) Draw and label the following features on the precis sketch map below:
- the location of the Busselton Airfield in 1969 (1 mark)
 - the extent of the Busselton built-up areas in 2016. (2 marks)
- (b) On the same sketch map, label the intermittent swamp (1969). (1 mark)



See next page

Refer to the table below to answer Question 22.

Mean monthly maximum and minimum temperatures Busselton

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Mean monthly maximum temperature	30	30	28	24	20	18	17	17	18	21	25	28
Mean monthly minimum temperature	14	15	13	11	9	8	7	7	8	9	11	12

Question 22

(2 marks)

- (a) What is the range in mean monthly temperatures experienced in Busselton? (1 mark)

- (b) Calculate the mean yearly maximum temperature experienced in Busselton. (1 mark)

See next page

Refer to **Source 1**: Busselton topographic map 1969 and **Source 3**: Busselton photograph insert 2016 to answer Question 23.

Question 23

(6 marks)

- (a) Identify **two** processes of land cover change that took place between 1969 and 2016 in the area depicted by **Source 3**. (2 marks)

One: _____

Two: _____

- (b) Select **one** process identified in part (a) and describe the location and extent of the land cover change that occurred from 1969 to 2016. Make specific reference to the sources in your answer. (4 marks)

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Question 24

(3 marks)

Outline the concept of ecosystem structure and dynamics.

Question 25

(4 marks)

Identify **one** source from recent human history and **one** source from geological time and account for how these provide evidence for either climate change **or** biodiversity loss.

Recent human history: _____

Geological time: _____

Refer to **Source 6**: World land use over the long-term to answer Question 26.

Question 26**(4 marks)**

With specific reference to **Source 6**, describe the extent to which the earth's surface has been modified by any **two** of the following over time:

- cropland
- grazing land
- built-up areas.

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See next page

Refer to **Source 7: Australia** to answer Question 27.

Question 27

(6 marks)

Select **two** of the following factors and explain how they have contributed to the spatial distribution of urban and rural places in Australia. Refer to specific evidence from **Source 7** in your response.

- historical
- cultural
- economic
- environmental

One: _____

Two: _____

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Question 28

(4 marks)

Provide **one** economic and **one** environmental example demonstrating the interdependence of urban and rural places.

Economic: _____

Environmental: _____

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Question 29

(4 marks)

From the list below, select **two** challenges facing rural and remote places in Australia, including Indigenous communities. Explain how each presents a challenge to these places.

- population loss
- economic restructuring
- employment
- housing
- service and water provision
- concentrations of socially vulnerable populations
- social inclusion and exclusion
- transportation
- resource degradation
- land-use conflicts
- declining political influence
- isolation and remoteness
- fly-in/fly-out work patterns

One: _____

Two: _____

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Refer to **Source 8**: Percentage urban and urban agglomerations by size and class to answer Question 30.

Question 30

(3 marks)

With specific reference to **Source 8**, describe the relationship between the changes from 1990 to 2030 in the percentage of the population that is urban and the number and size of cities.

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 31 and 32. Part B: Unit 4 consists of Questions 33 and 34. 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 31 **or** Question 32.

Indicate the question you will answer by ticking the box next to the question. Write your answer on pages 17–21. When you have completed Part A: Unit 3, turn to page 22.

Suggested working time: 40 minutes.

 Question 31 **(20 marks)**

- (a) Explain the interrelationships between land cover change and climate with direct reference to surface reflectivity and the process of natural carbon sequestration.

or

Explain the interrelationships between land cover change and biodiversity loss with direct reference to shifting ecological boundaries, evolutionary diversification and species extinction. (8 marks)

- (b) Evaluate a program that addresses the impacts of land cover change, giving consideration to its environmental, economic and social benefits and costs. (12 marks)

OR

 Question 32 **(20 marks)**

- (a) Explain **one** natural cause and **one** anthropogenic cause of global climate change.

or

Explain **one** natural cause and **one** anthropogenic cause of declining biodiversity. (8 marks)

- (b) Evaluate **one** approach to the management of land cover change, with specific reference to the concept of sustainability. (12 marks)

See next page

Question number: _____

See next page

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Part B: Unit 4

20% (20 marks)

Choose **either** Question 33 **or** Question 34.

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 33 (20 marks)

- (a) Describe the patterns of **two** demographic characteristics in a megacity of your choice. (8 marks)
- (b) Describe a planning strategy designed to address an urban challenge in metropolitan Perth **or** a regional urban centre in Western Australia and compare this with a planning response implemented elsewhere. (12 marks)

OR

Question 34 (20 marks)

- (a) Describe the patterns of **two** demographic characteristics in metropolitan Perth **or** a regional urban centre in Western Australia. (8 marks)
- (b) Describe a planning strategy designed to address an urban challenge in **one** megacity and compare this with a planning response implemented in another megacity. (12 marks)

End of questions

Question number: _____

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Question number: _____

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Supplementary page

Question number: _____

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Supplementary page

Question number: _____

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ACKNOWLEDGEMENTS

- Question 21** Sketch map adapted from: Division of National Mapping. (1981). *1930 Busselton Western Australia* (1st ed.) (National topographic map series: 1:100 000). Belconnen, ACT: NATMAP.
- Question 22** Table data source: Bureau of Meteorology. (2018). *Monthly mean minimum temperature: Busselton Aero*. Retrieved April, 2018, from http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=38&p_display_type=dataFile&p_startYear=&p_c=&p_stn_num=009603

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