GEOGRAPHY
Stage 3

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

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

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Instructions to candidates

1. The rules for the conduct of Western Australian external examinations are detailed in the *Year 12 Information Handbook 2015*. 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, 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.

3. Wherever possible, you 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 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 your answer for any question. The Broadsheet is **not** to be handed in with your Question/Answer Booklet.
STAGE 3 3 GEOGRAPHY

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 to answer Questions 1–7.

1. Identify the cultural feature located at GR 808281.
   (a) Rockingham Golf Course
   (b) Police Station
   (c) Rockingham Beach
   (d) Sunray Caravan Park

2. What is the closest latitude and longitude of Seal Island (GR 765262)?
   (a) 115°41´E 32°18´S
   (b) 115°41´W 32°16´S
   (c) 32°18´S 115°41´E
   (d) 32°16´S 115°41´W

3. Identify the type of vegetation cover located in AR 7926.
   (a) scattered scrub
   (b) scattered forest
   (c) pine plantation
   (d) medium scrub

4. Calculate the length of Parkin Street between easting 79 and easting 80.
   (a) 4 km
   (b) 400 m
   (c) 1 km
   (d) 10 km

5. In which direction does the Causeway (GR 773285) extend from the mainland?
   (a) north
   (b) north-north east
   (c) south
   (d) south-south west
6. What is the closest bearing followed when travelling from the south-west corner of Rockingham Golf Course (GR 811270) along Read Street to the intersection of Malibu Road at GR 819251?

(a) 255°
(b) 335°
(c) 75°
(d) 155°

7. The total area of open water within Lake Richmond (GR 790270) is closest to

(a) 0.5 km².
(b) 0.75 km².
(c) 1 km².
(d) 0.25 km².

Refer to Sources 1 and 2 on the Broadsheet to answer Questions 8–11.

8. What former land use occupied the location at point A on the aerial photograph in 1978?

(a) high school
(b) residential
(c) aged persons’ home
(d) golf course

9. Which urban process is best represented by the land use changes shown south of northing 26?

(a) agglomeration
(b) urban sprawl
(c) inertia
(d) renewal

10. Identify the main direction in which Rockingham Park Shopping Centre (AR 8126) expanded between the years 1978 and 2013.

(a) southerly direction
(b) westerly direction
(c) northerly direction
(d) easterly direction

11. Which of the following area reference locations has experienced the least land use change between 1978 and 2013?

(a) AR 8025
(b) AR 8123
(c) AR 7727
(d) AR 7926
12. Which of the following urban problems is best illustrated by Source 3?

   (a) provision of infrastructure and services
   (b) urban blight
   (c) pollution
   (d) loss of amenity

13. Which of the following urban processes is not occurring in Source 4?

   (a) planning regulations
   (b) land use competition
   (c) renewal
   (d) urban sprawl

14. What is the average east-west extent of the Swan Coastal Plain between Perth and Mandurah?

   (a) approximately 25 km
   (b) approximately 75 km
   (c) approximately 50 km
   (d) approximately 10 km

15. Which suburb most exceeds the Perth Metropolitan Area average for housing owned with a mortgage?

   (a) Applecross
   (b) Rockingham
   (c) Ellenbrook
   (d) Jarrahdale

16. The urban problem of traffic congestion is most characteristic of the

   (a) newer growth zone.
   (b) established residential zone.
   (c) inner mixed zone.
   (d) rural-urban fringe.
17. The greenhouse effect is an element of which of the following natural systems?

(a) carbon cycle
(b) hydrological cycle
(c) heat budget
(d) atmospheric circulation

18. Which of the following can provide evidence for climate change in both recent human history and over geological time?

(a) palaeoclimatology
(b) sea level change
(c) satellite data
(d) archival records

Refer to Source 7 on the Broadsheet to answer Question 19.

19. Which of the following best describes the change in the global land-ocean temperature index for the two periods 1900–1910 and 2000–2010?

(a) decrease in temperature in 1900–1910 and increase in temperature in 2000–2010
(b) increase in temperature in 1900–1910 and decrease in temperature in 2000–2010
(c) increase in temperature in 1900–1910 and increase in temperature in 2000–2010
(d) decrease in temperature in 1900–1910 and decrease in temperature in 2000–2010

Refer to Source 8 on the Broadsheet to answer Question 20.

20. In a 4 °C scenario, which of the following key risks from climate change has the least potential for additional adaptation to reduce risk?

(a) increased drought-related water and food shortage
(b) heat-related human mortality
(c) increased flood damage to infrastructure and settlements
(d) significant change in composition and structure of coral reef systems

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.
- 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: 40 minutes.

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Question 21 (4 marks)

Refer to Source 2 on the Broadsheet to answer Question 21.

Identify and provide grid references for two locations that are modelled as being susceptible to flooding under the high sea level rise scenario for 2100.

One: __________________________________________________________________________

Grid reference: ____________________________________________________________________

Two: __________________________________________________________________________

Grid reference: ____________________________________________________________________

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Question 22 (2 marks)

Outline the difference between the terms weather and climate.

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Question 23  
(3 marks)

Refer to Source 9 on the Broadsheet to answer Question 23.

Describe three major changes in global anthropogenic carbon dioxide (CO₂) emissions over time.

One: __________________________________________________________

______________________________________________________________

______________________________________________________________

Two: __________________________________________________________

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Three: _________________________________________________________

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Question 24  
(3 marks)

Refer to Source 10 on the Broadsheet to answer Question 24.

Identify three spatial characteristics of sea level change between 1993 and 2008.

One: __________________________________________________________

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______________________________________________________________

Two: __________________________________________________________

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______________________________________________________________

Three: _________________________________________________________

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Question 25  
(a) Define the process of invasion and succession.  

(b) Provide one example of this process within the Perth Metropolitan Area.  

Question 26  
Describe three characteristics of the Perth Metropolitan Area’s rural-urban fringe.  
One:  
Two:  
Three:
Question 27 (2 marks)

(a) Identify one factor that increases land values in the Perth Metropolitan Area. (1 mark)

(b) Identify one factor that decreases land values in the Perth Metropolitan Area. (1 mark)

End of Section Two
STAGE 3 GEOGRAPHY

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.

• 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.

Suggested working time: 110 minutes.

Part A: Answer either Question 28 or 29.

Question 28 (30 marks)

Refer to Source 5 on the Broadsheet to answer (a) below.

(a) Describe and account for the external morphology of the Perth Metropolitan Area. (8 marks)

Select two of the following factors to answer (b) below:
• environmental
• economic
• social
• political.

(b) Discuss how the two selected factors influence urban planning decisions in the Perth Metropolitan Area. (10 marks)

(c) Outline the problem of urban sprawl in the Perth Metropolitan Area and, for a megacity you have studied, outline one different urban problem. (12 marks)

or

Question 29 (30 marks)

Refer to Source 6 on the Broadsheet to answer (a) below.

(a) Outline the demographic patterns for age, income and housing within the Perth Metropolitan Area. (8 marks)

(b) Discuss the views and attitudes of two major stakeholder groups in response to the same planning strategy within the Perth Metropolitan Area. (10 marks)

(c) Outline the problem of water supplies and water quality in the Perth Metropolitan Area and, for a megacity you have studied, outline one different urban problem. (12 marks)
Part B: Answer either Question 30 or 31.

Question 30 (30 marks)

(a) Explain the concept of climate change and provide evidence for this process, using one example from recent human history and one example over geological time. (8 marks)

(b) Examine how climate change alters the spatial pattern of either agriculture or urban settlement and industry. (10 marks)

Select two of the following factors to answer (c) below:
- environmental
- economic
- social
- political.

(c) Outline how the two selected factors affect decisions about sustainability, with reference to either agriculture or urban settlement and industry. (12 marks)

or

Question 31 (30 marks)

(a) Explain the concept of sustainability, using two examples from agriculture or using two examples from urban settlement and industry. (8 marks)

(b) Outline the key elements of the hydrological cycle and describe how this system interacts with other natural systems to influence the earth’s climate. (10 marks)

(c) Outline the extent to which climate change affects sustainability, using one example at the local scale and one example at the global scale. (12 marks)
Question number: ____________  

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