



NSW Education Standards Authority

2020 HIGHER SCHOOL CERTIFICATE EXAMINATION

Geography

General Instructions

- Reading time – 5 minutes
- Working time – 3 hours
- Write using black pen
- Calculators approved by NESA may be used
- A Stimulus Booklet is provided with this paper

Total marks: 100

Section I – 20 marks (pages 2–8)

- Attempt Questions 1–20
- Allow about 35 minutes for this section

Section II – 40 marks (pages 9–16)

- Attempt Questions 21–24
- Allow about 1 hour and 10 minutes for this section

Section III – 40 marks (page 17)

- Attempt TWO questions from Questions 25–27
- Allow about 1 hour and 15 minutes for this section

Section I

20 marks

Attempt Questions 1–20

Allow about 35 minutes for this section

Refer to the Stimulus Booklet

Use the multiple-choice answer sheet for Questions 1–20.

1 Which of the following is an example of the spatial dimension of an economic enterprise?

- A. Latitude position
- B. Change over time
- C. A geographic process
- D. An impact of human stress

2 An organisation moves its office from a city centre to a regional centre.

Of which urban dynamic is this an example?

- A. Counterurbanisation
- B. Decentralisation
- C. Exurbanisation
- D. Urbanisation

Refer to Source A on page 1 of the Stimulus Booklet to answer Question 3.

3 The cartoon in Source A shows people discussing

- A. suburbanisation.
- B. impacts on urban villages.
- C. urban consolidation in the city.
- D. the growth of forests into suburban areas.

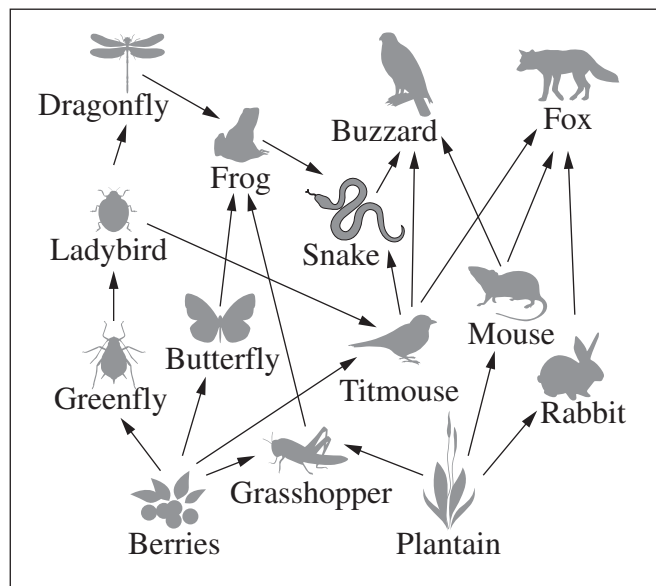
Refer to Source *B* on page 1 of the Stimulus Booklet to answer Question 4.

- 4** What is the approximate average rainfall in summer, in millimetres, for the weather station?
- A. 25
 - B. 95
 - C. 270
 - D. 630

Refer to Source *C* on page 1 of the Stimulus Booklet to answer Question 5.

- 5** The most appropriate management strategy to protect the bilby in Karijini National Park would be to reduce
- A. diversity.
 - B. mining operations.
 - C. rubbish left by campers.
 - D. exotic species such as cats and foxes.
- 6** A park ranger is concerned about future erosion on a walking track in a national park.
- Which of the following is a primary fieldwork technique best suited to investigating this geographical issue?
- A. Survey of park visitors about track use
 - B. Gathering internet information on erosion
 - C. Taking photographs over time of track edges
 - D. Obtaining historic records of visitor numbers
- 7** What is ONE advantage of using a choropleth map rather than a table of statistics when analysing field data?
- A. Data can be shown more precisely.
 - B. It better shows data change over time.
 - C. Lists in categories are easier to interpret.
 - D. Spatial relationships are easier to identify.

- 8 The diagram shows a food web of an ecosystem.



Based on the diagram, which of the following is a primary consumer?

- A. Berries
 - B. Dragonfly
 - C. Fox
 - D. Grasshopper
- Refer to Source *D* on page 1 of the Stimulus Booklet to answer Question 9.
- 9 If a driver takes 11 hours to drive from Perth to Carnarvon, what is their average speed?
- A. 86 km/h
 - B. 78 km/h
 - C. 72 km/h
 - D. 66 km/h

- 10** Refer to Source *H* on page 4 of the Stimulus Booklet to answer Question 10.

What is the latitude and longitude of the earthquake with the largest magnitude off the north-west coast of Western Australia?

- A. 17°S, 119°W
- B. 17°S, 121°E
- C. 26°S, 116°E
- D. 26°S, 124°W

Refer to Source *E* on pages 2 and 3 of the Stimulus Booklet to answer Questions 11–15.

- 11** A cartographer is considering changing the scale of Source *E*.

If a larger scale is used for Source *E*, it might benefit park management by showing

- A. more settlement areas.
- B. more detail of the gorges.
- C. a wider area of the national park.
- D. regional towns, such as Carnarvon.

- 12** What is the approximate bearing from the spot elevation in AR 3726 to the towers in AR 3332?

- A. 30°
- B. 45°
- C. 315°
- D. 330°

- 13** What is the average direction of flow of the watercourse in Wittenoom Gorge in AR 3427?

- A. NE
- B. NNE
- C. SW
- D. SSW

- 14** A walking trail is proposed between the spot height in AR 3224 and the spot height in AR 3323.

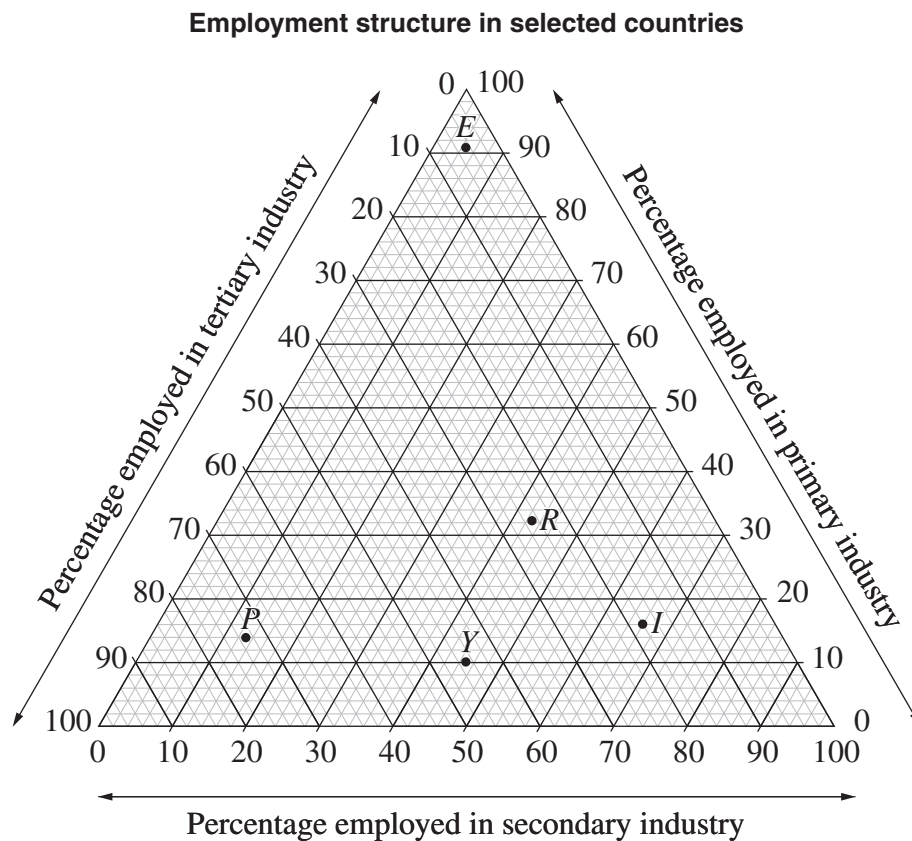
What is the approximate average gradient between these points?

- A. 1:2
 - B. 1:190
 - C. 1:240
 - D. 1:490
- 15** Which area reference includes a spot elevation that is visible from the spot elevation in AR 3229?
- A. AR 3024
 - B. AR 3426
 - C. AR 3731
 - D. AR 3733

Refer to Sources *E* and *F* on pages 2 and 3 of the Stimulus Booklet to answer Question 16.

- 16** At which grid reference on Source *E* was the photograph in Source *F* taken?
- A. GR 294232
 - B. GR 299232
 - C. GR 309232
 - D. GR 314232

Refer to the following graph to answer Questions 17 and 18.



17 What percentage of people are employed in tertiary industry in Country *R*?

- A. 25
- B. 32
- C. 42
- D. 68

18 Which country is most likely to contain a world city?

- A. *E*
- B. *I*
- C. *P*
- D. *Y*

Refer to Source *I* on page 4 of the Stimulus Booklet to answer Question 19.

- 19** Suppose that the number of Australians born in India and the United Kingdom increased by 10% from 2011 to 2019.

Approximately how many Australians born overseas would be from India and the United Kingdom in 2019?

- A. 1.4 million
- B. 1.6 million
- C. 1.8 million
- D. 2.0 million

Refer to Source *G* on page 3 of the Stimulus Booklet to answer Question 20.

- 20** This photograph was taken at midday in July.

What direction was the photographer facing?

- A. East
- B. North
- C. South
- D. West

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Centre Number

Geography

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Student Number

Section II Answer Booklet

40 marks

Attempt Questions 21–24

Allow about 1 hour and 10 minutes for this section

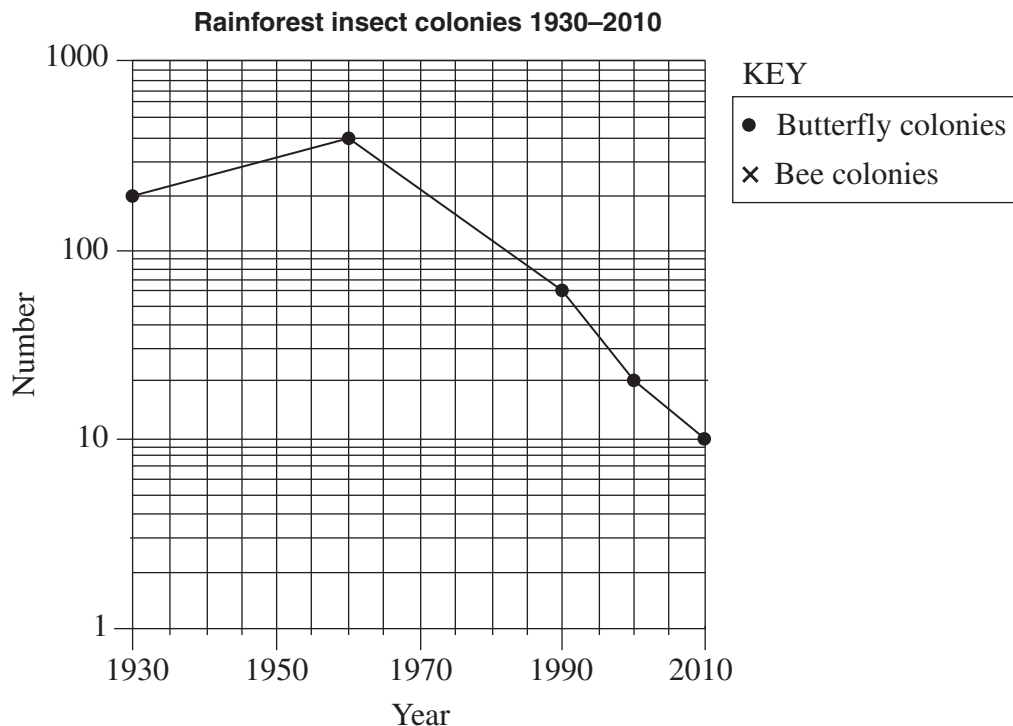
Instructions

- Write your Centre Number and Student Number at the top of this page.
- Use the Stimulus Booklet and your knowledge of geography to answer Questions 21–24 in the spaces provided. These spaces provide guidance for the expected length of response.
- Show all relevant working in questions involving calculations.
- Extra writing space is provided at the back of this booklet.
If you use this space, clearly indicate which question you are answering.

Please turn over

Question 21 (4 marks)

Refer to the following graph to answer parts (a) and (b).



- (a) Using the key provided, graph the following data for the rainforest bee colonies on the graph above.

2

Rainforest bee colonies per year

<i>Year</i>	<i>Number</i>
1930	500
1960	700
1980	80
2010	4

- (b) Provide possible reasons for the trend in the number of bee and butterfly colonies after 1960.

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Question 22 (9 marks)

- (a) Outline the spatial patterns and dimensions of ONE ecosystem at risk. 2

Ecosystem at risk:

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Refer to Sources *E*, *F* and *G* on pages 2 and 3 of the Stimulus Booklet to answer parts (b) and (c).

- (b) Identify TWO biophysical processes operating in Karijini National Park and justify your answer. 3

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- (c) Discuss potential human impacts on the ecosystems in Karijini National Park. 4

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Question 23 (13 marks)

- (a) Explain why spatial exclusion occurs in urban places.

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- (b) Explain the changing nature and location of residential land in ONE large city from the developed world.

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Do NOT write in this area.

Question 23 continues on page 13

Question 23 (continued)

Refer to Source *J* on page 4 of the Stimulus Booklet to answer part (c).

- (c) Explain the roles of world cities as centres of economic and cultural authority. **5**

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End of Question 23

Question 24 (14 marks)

Answer part (a) with reference to an economic enterprise you have studied.

Economic enterprise:

- (a) Outline TWO impacts of environmental change on the economic enterprise. 2

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Answer parts (b)–(d) with reference to an economic activity you have studied.

Economic activity:

- (b) Outline TWO future directions of the economic activity. 2

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- (c) Describe the spatial patterns of the economic activity. 3

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Question 24 continues on page 15

Question 24 (continued)

- (d) How do economic, political and organisational factors affect the nature of the economic activity?

7

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End of Question 24

Section II extra writing space

If you use this space, clearly indicate which question you are answering.

Do NOT write in this area.

Geography

Section III

40 marks

Attempt TWO questions from Questions 25–27

Allow about 1 hour and 15 minutes for this section

Answer both questions in the Section III Writing Booklet. Extra writing booklets are available.

Your answers will be assessed on how well you:

- demonstrate geographical knowledge and understanding relevant to the question
 - communicate ideas and information using geographical terms and concepts appropriately
 - refer to case studies, illustrative examples and the Stimulus Booklet where appropriate
 - present a sustained, logical and cohesive response
-

Question 25 (20 marks)

Assess the vulnerability and resilience of ecosystems at risk.

Question 26 (20 marks)

Evaluate responses to the challenges of living in mega cities.

Question 27 (20 marks)

Explain the linkages and flows within an economic enterprise operating at a local scale.

End of paper

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Source A – Cartoon showing an urban dynamic of change



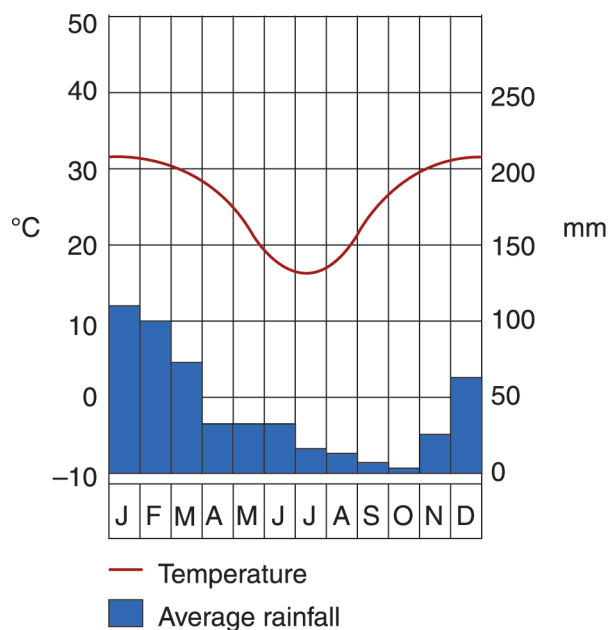
Source C – About Karijini National Park

Karijini National Park

- Significant Aboriginal cultural heritage – sites highly valued by the Panyjima, Yinhawangka and Kurruma Aboriginal Peoples
- Considerable biodiversity, as it is a complete north-south transverse section of the Hamersley Range
- Rich in flora species, eg 46 types of Acacia
- Refuge for the bilby – a nationally vulnerable mammal
- Four rare vertebrate species, managed under the Wildlife Conservation Act
- Scenically outstanding eg red-banded gorges, waterfalls and deep permanent pools

Extract from the Australian Heritage Commission/Council
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Source B – Climate graph from a weather station



Source D – Road distance from Karijini National Park to major centres

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Legend for Source E

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Source F – Walking track in Karijini National Park (Western Australia)



Source G – A Karijini National Park gorge (Western Australia)



Source H – Western Australia earthquake map (magnitude 4 to 7)

Source I – Countries of birth for Australians born overseas (2011)

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Source J – World cities

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