Question Booklet
2016 australian geography competition

First name

→ G A I L

A B C D E F G H I J K L M

1. Use a 2B pencil to complete the answer sheet.

2. Before the start of the test, fill in the information about yourself and your school. Where required **you must fill in the ovals**, not just write the letters and numbers, as the answer sheet is computer marked and only ovals are recorded. For example, a filled in First name for a person named Gail would look like the sample on the right. Also, fill in an oval in the school assigned column if instructed to do so by your teacher. Otherwise leave it blank.

3. If you are in **Year 7**, **Year 8** or **less** complete Questions 1-30.

4. If you are in **Year 9** or **Year 10** complete Questions 1-40.

5. If you are in **Year 11** or **Year 12** complete Questions 16-50.

6. Answer each question by filling in only one oval that corresponds to the most appropriate choice for that question. If you change your mind, you must erase the wrong answer completely so that only one oval is filled in for each question.

7. Do not mark the front or back of the answer sheet in any other way as this can lead to errors in the computerised marking, or to you not getting a result.

8. You have **35 minutes** to answer the questions.

The Royal Geographical Society of Queensland Inc

Australian Geography Teachers' Association Ltd

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THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

SCHOOL OF GEOGRAPHY, PLANNING & ENVIRONMENTAL MANAGEMENT
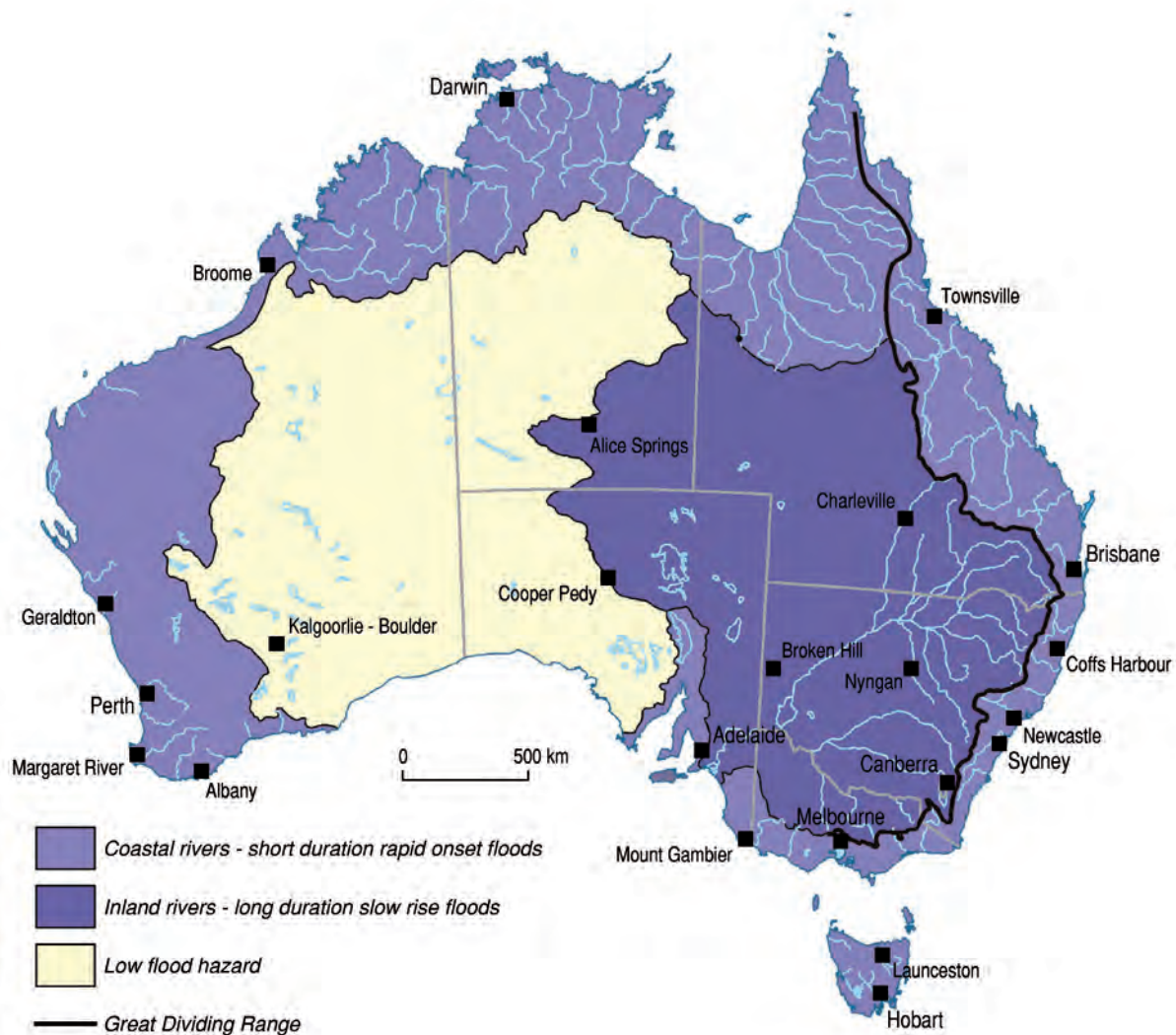
Figure 1. *Flood hazard potential in Australia*   *Courtesy of the Commonwealth of Australia (Geoscience Australia)*

Start at Question 1 if you are in **Year 10 or less**. Start at Question 16 if you are in Year 11 or 12.

1   **Which type of hazard is flooding?**
   A   biological
   B   chemical
   C   geomorphic
   D   hydrological
   E   tectonic

2   **From Figure 1, which of these towns is most at risk of short duration floods?**
   A   Alice Springs, NT
   B   Charleville, Qld
   C   Kalgoorlie-Boulder, WA
   D   Launceston, Tas
   E   Nyngan, NSW

3   **Based on Figure 1, which of these states experiences the least risk of long duration floods?**
   A   New South Wales
   B   Queensland
   C   South Australia
   D   Victoria
   E   Western Australia

4   **The Great Dividing Range (see Figure 1) is an example of a:**
   A   catchment
   B   drainage basin
   C   meander
   D   watershed
   E   watertable

Floodplains are important to Aboriginal people because wetland resources, such as food, tools and medicinal items are abundant during floods. Places and objects on the floodplain contribute to Aboriginal customary law, traditions, history and current practices.

Figure 2. Aboriginal use of floodplains
Source: NSW Office of Environment and Heritage

5 **The quote in Figure 2 demonstrates that:**
A Aboriginal peoples knew how to avoid flood-prone areas
B flooding only has negative consequences
C floods were less severe before European settlement
D people can have different perspectives on flooding
E all of the above

6 **From Table 1, in the 12 months before the 2011 Census, how many people moved to South Australia from overseas?**
A 2,437
B 17,545
C 20,107
D 174,941
E 215,030

7 **From Table 1, which state or territory had the largest number of interstate migrants from 2010 to 2011?**
A Australian Capital Territory
B New South Wales
C Northern Territory
D Queensland
E Victoria

8 **Based on Table 1, which statement best describes the overall movement of people in Australia?**
A Australia's external immigration is more significant than its internal migration.
B Australia's internal migration is less than 2% of its total population.
C Australia's population grew by 3,203,887 from 2010 to 2011 through migration.
D Movement within states and territories is the largest component of internal migration.
E Queensland has the highest incidence of internal migration.

9 **Which of these is least likely to be a factor in a newly retired person's choice of where to move?**
A close to shops
B employment opportunities
C excellent transport links
D safe area
E sense of community

Table 1. *Place of usual residence 1 year ago by state/territory of usual residence (for those who have moved), 2011 Census*
Source: Australian Bureau of Statistics

| Place of usual residence at 2011 Census	Place of usual residence 1 year ago				
	Internal migration		Overseas	Not stated	Total
	Same state/ territory	Elsewhere in Australia			
New South Wales	771 843	70 239	11 077	92 847	946 006
Victoria	595 782	58 009	7 106	78 563	739 460
Queensland	616 281	75 238	9 989	63 184	764 692
South Australia	174 941	20 107	2 437	17 545	215 030
Western Australia	286 941	32 777	3 659	45 823	369 200
Tasmania	53 427	10 412	685	3 368	67 892
Northern Territory	23 045	12 834	574	3 364	39 817
Australian Capital Territory	36 373	17 104	461	7 471	61 409
Other Territories	80	263	0	38	381
Total	**2 558 713**	**296 983**	**35 988**	**312 203**	**3 203 887**
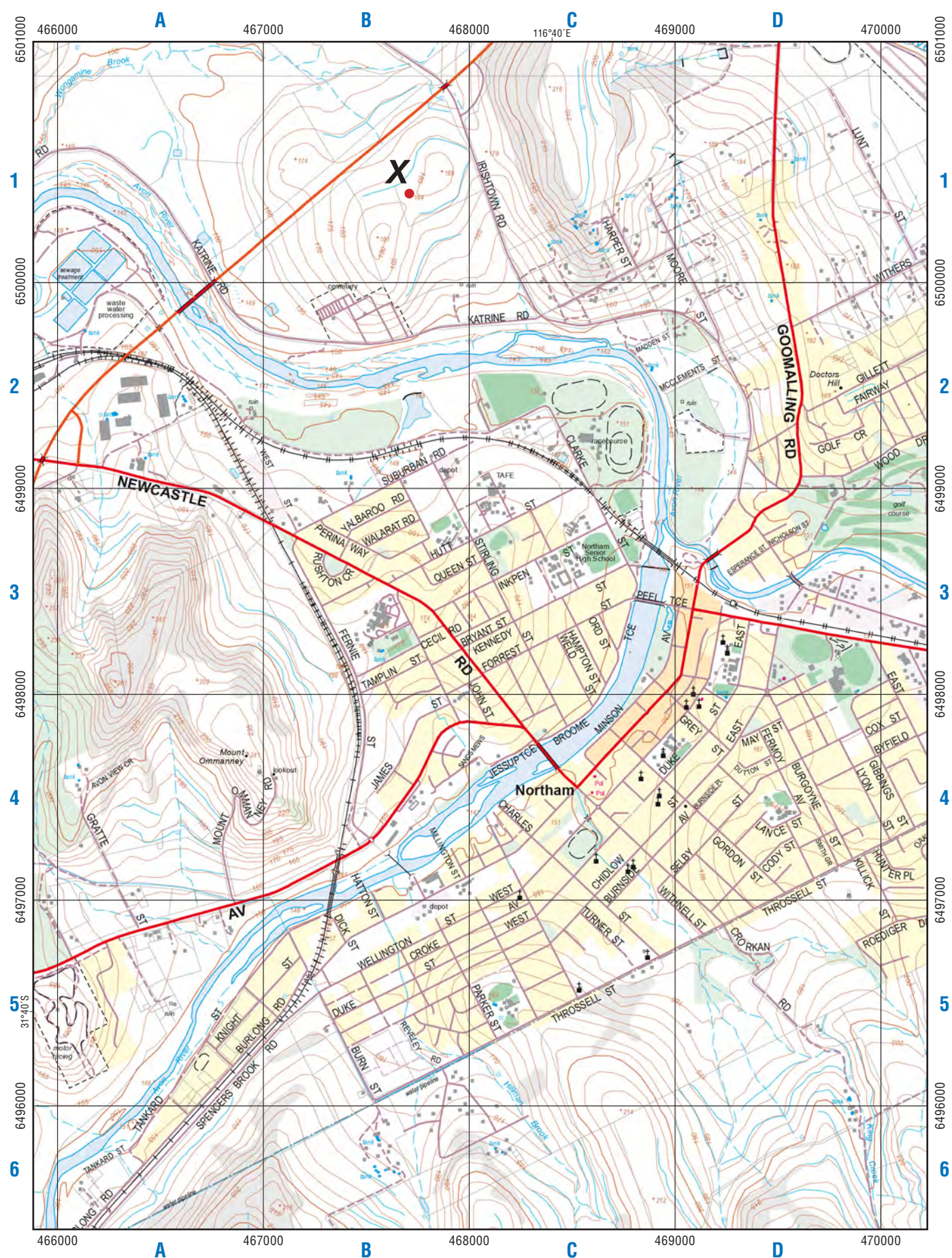
Figure 3. Map of Northham and Avon River, Western Australia

Reproduced by permission of the Western Australian Land Information Authority (Landgate), 2016

Legend

National Highway, Sealed		Motor Race Track	
Main Road, Sealed		Dog Race Track	
National Highway, Overpass		Horse Race Track	
Minor Road, Sealed		Trotting Track	
Minor Road, Unsealed		Dam Wall	
Minor Road, Roundabout		Pipeline Water, Above	
Minor Road Overpass		Pipeline Water, On	
Laneway, Sealed		Powerline, 132kV	
Track		Powerline, 66kV	
Track		Quarry	
Proposed Road		Windmill	
Rail, Single Line		Well with Windmill	
Rail, Multiple Lines		Tank with Windmill	
Public Railway Station		Water Tank	
Rail Bridge		Earth Dam, Perennial	
Road Bridge		Spring, Perennial	
Road Footbridge		River, Non-perennial	
Rail Bridge		Drain	
Road Bridge		Earth Dam	
Licensed Runway		Lake, Perennial	
Runway, Hardstand		Pool, Perennial	
Building		Watercourse, Perennial	
Building, Homestead		Subject to Inundation	
Ruin		Sewage Treatment Pond	
Silo		Sump	
Building Shape		Storage Tank, Water	
Silo		Golf Course	
Homestead		Park or Reserve	
Church		Racecourse	
Fire and Rescue, Volunteer		Depot, Maintenance	
Police Station		Swimming Pool	
State Emergency Service		Commercial Centre	
Communication Tower		Industrial Area	
Lookout Tower		Urban Area	
Historic Site		Prepared Playing Ground	
Hill		Airport	
Mountain		Cemetery	
Spot Height		Grain Storage	
Cutting		Waste Water Plant	
Embankment		Horse Racing	
Rock, Exposed		Motor Racing	
Fence		Army Base	
BMX Race Track		Caravan/Tourist Park	
		Prison/Detention Centre	
		Road Train Assembly	

0   0.25   0.5   1

Kilometres

Grid North

N

5 metre contour interval
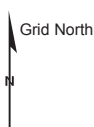
10   **How long is Gordon Street (grid squares C4 to D4, Figure 3)?**

A   0.9 km

B   1.2 km

C   4.7 km

D   6.1 km

E   8.5 km

11   **If you were travelling along Gordon Street (D4) away from the river, in which direction would you be going?**

A   northeast

B   north-northwest

C   northwest

D   southeast

E   southwest

12   **Which of these is found in the area shown in grid square B2?**

A   main road

B   multiple rail line

C   powerline

D   road footbridge

E   trotting track

13   **Which of these grid squares shows the steepest terrain?**

A   A3

B   B1

C   C5

D   D2

E   D4

14   **Which landform is located at Point X on the map (B1)?**

A   escarpment

B   hill

C   mesa

D   peak

E   saddle

15   **Northam's development depended to a large extent on its transport links, in particular:**

A   an important railway junction

B   a major highway through the town

C   a river that is navigable beyond Northam

D   a safe port

E   all of the above

Open this page out to see the map at the same time.

Start at Question 16 if you are in **Year 11 or 12**. Others continue with questions.

16 **Why is the land in the bend of the Avon River (C2) used for a racecourse?**

A   It has good views of the town centre.

B   It is a floodplain.

C   It is close to a railway station.

D   It is close to the TAFE college.

E   It is too far from the town centre to be used for residential development.

Figure 4. *Satellite image of part of Northam, WA*
© CNES 2015 Distribution AIRBUS DS

17 **The satellite image (Figure 4) is of which grid square in the map (Figure 3)?**

A   B2

B   B4

C   C2

D   C3

E   C4

18 **In which general direction is the Avon River flowing in the area shown in grid square B2?**

A   east

B   north

C   northeast

D   south

E   west

19 **The map (Figure 3) shows most of the town of Northam. Based on that, what is the approximate population of Northam?**

A   700

B   7,000

C   70,000

D   700,000

E   7,000,000

20 **Northam, WA, has hot dry summers and cool wet winters. This is typical of which climate?**

A   equatorial

B   Mediterranean

C   semi-arid

D   temperate

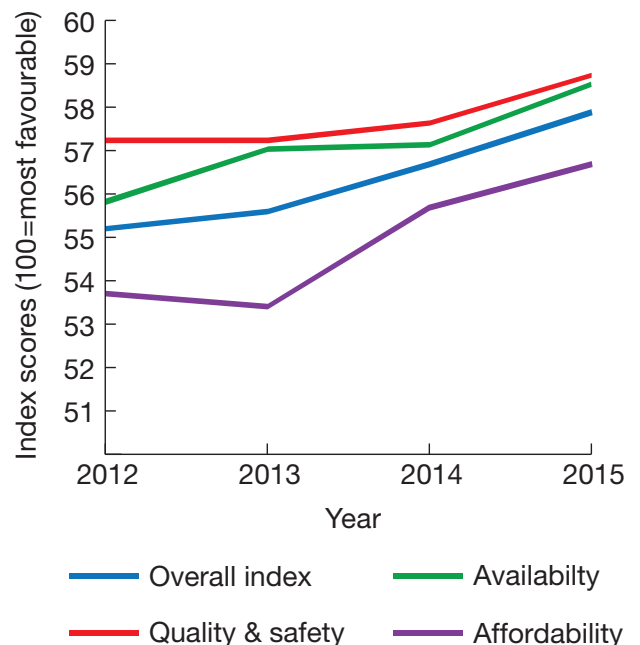E   tropical

Figure 5. *Global food security index scores, 2012-15*
Source: The Economist Intelligence Unit

21 **Which of these statements is supported by the data in Figure 5?**

A   Between 2014 and 2015 the quality and safety score improved by 59.

B   Food affordability has the most variability over time.

C   Overall food security improvements are becoming smaller each year.

D   Overall food security is getting worse.

E   Worsening food availability slowed overall improvement between 2012 and 2013.

Table 2. *Global food security index scores, 2015 (100=most favourable)*   *Source: The Economist Intelligence Unit*

Region	Availability	Affordability	Quality and safety
Asia and Pacific	58.5	56.4	56.6
Central and South America	56.7	58.6	59.9
Europe	71.5	79.2	78.5
Middle East and North Africa	60.2	62.0	60.7
North America	78.3	82.9	81.8
Sub-Saharan Africa	45.2	29.6	38.1

22 **From Table 2, what is Europe's food affordability score?**

A   58.6

B   62.0

C   71.5

D   78.5

E   79.2

23 **From Table 2, which region experiences the lowest level of food security?**

A   Asia and Pacific

B   Europe

C   Middle East and North Africa

D   North America

E   Sub-Saharan Africa

24 **Based on your analysis of Table 2, and your own understanding, Australia's food security scores are most similar to those of:**

A   Asia and Pacific

B   Central and South America

C   Middle East and North Africa

D   North America

E   Sub-Saharan Africa

25 **Based on your own understanding, which of these indicators contributes to the food security index's quality and safety score?**

A   agricultural import tariffs

B   dependency on food aid

C   nutritional standards

D   proportion of population under global poverty line

E   sufficiency of supply

Figure 6. *Spiny forest, Madagascar*

26 **Look at all three maps in Figure 7. In which part of Madagascar was the photo in Figure 6 taken?**

A   centre

B   east

C   north

D   south

E   west

27 **From Figure 7, in 1953 which biome dominated the area marked by the box?**

A   cleared land

B   forest

C   grasslands

D   mangroves

E   savannah

28 **From Figure 7, between 1990 and 2000 in which part of the island did most deforestation occur?**

A   centre

B   northeast

C   northwest

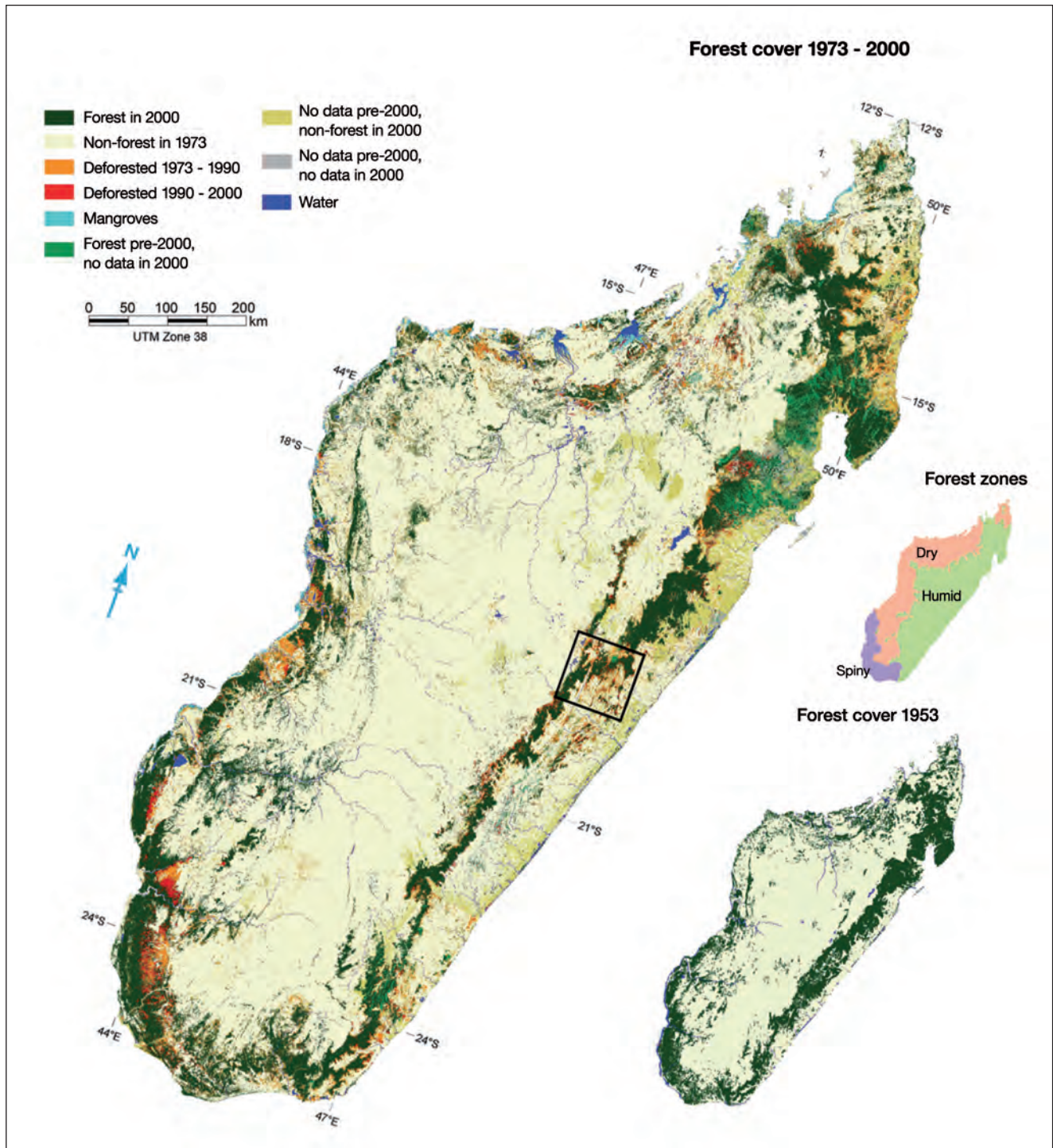D   southeast

E   southwest

Figure 7. *Forest cover of Madagascar 1953 - 2000: changes from 1973 to 2000 are shown in the main map, and forest cover in 1953 is shown in the lower-right map*   *Reproduced by permission of Grady Harper*

29   **Which environmental impact of deforestation is evident in the Betsiboka Estuary (Figure 8)?**

    A   increasing greenhouse gas emissions

    B   loss of canopy vegetation

    C   reduced biodiversity

    D   salinization

    E   soil erosion

30   **In Figure 8, which type of river is depicted?**

    A   alluvial fan

    B   braided stream

    C   meandering stream

    D   meltwater channel

    E   straight channel

Figure 8. *Satellite image of Betsiboka Estuary, Madagascar* © *NASA*

Stop at Question 30 if you are in **Year 7 or 8**. Others continue answering questions.

31 **In Figure 8, the river water is red due to high levels of which component in the surrounding lateritic soils?**

A   iron oxides

B   limestone

C   organic matter

D   quartz

E   sand

32 **From Figure 9, which country receives the most e-waste?**

A   China

B   European Union

C   India

D   Mexico

E   United States

33 **From Figure 9, which country is a known source of the e-waste arriving in Thailand?**

A   Australia

B   European Union

C   Japan

D   South Korea

E   United States of America

34 **Using Figure 9, what is an accurate description of most e-waste transfers?**

A   between developed countries

B   between developing countries

C   from developed to developing countries

D   from developing to developed countries

E   internally in developed countries

35 **Which of these is a significant reason for the global trade in e-waste?**

A   lack of demand for recycled components in developing countries

B   low wages in developed countries

C   poor enforcement of environmental protection laws in developing countries

D   strong workplace health and safety laws in developing countries

E   technically advanced recycling facilities in developed countries

36 **The global trade in e-waste best matches the geographic concept of:**

A   change
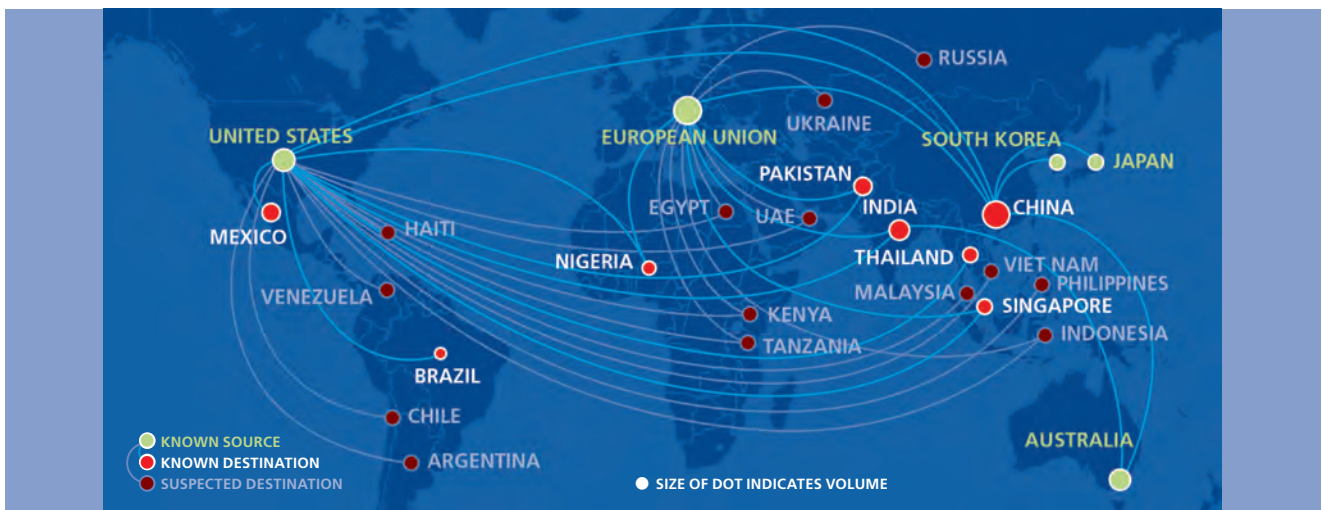
B   interconnection

C   place

D   scale

E   space

Figure 9. *Known and suspected routes of e-waste dumping* *Source: Silicon Valley Toxics Coalition*
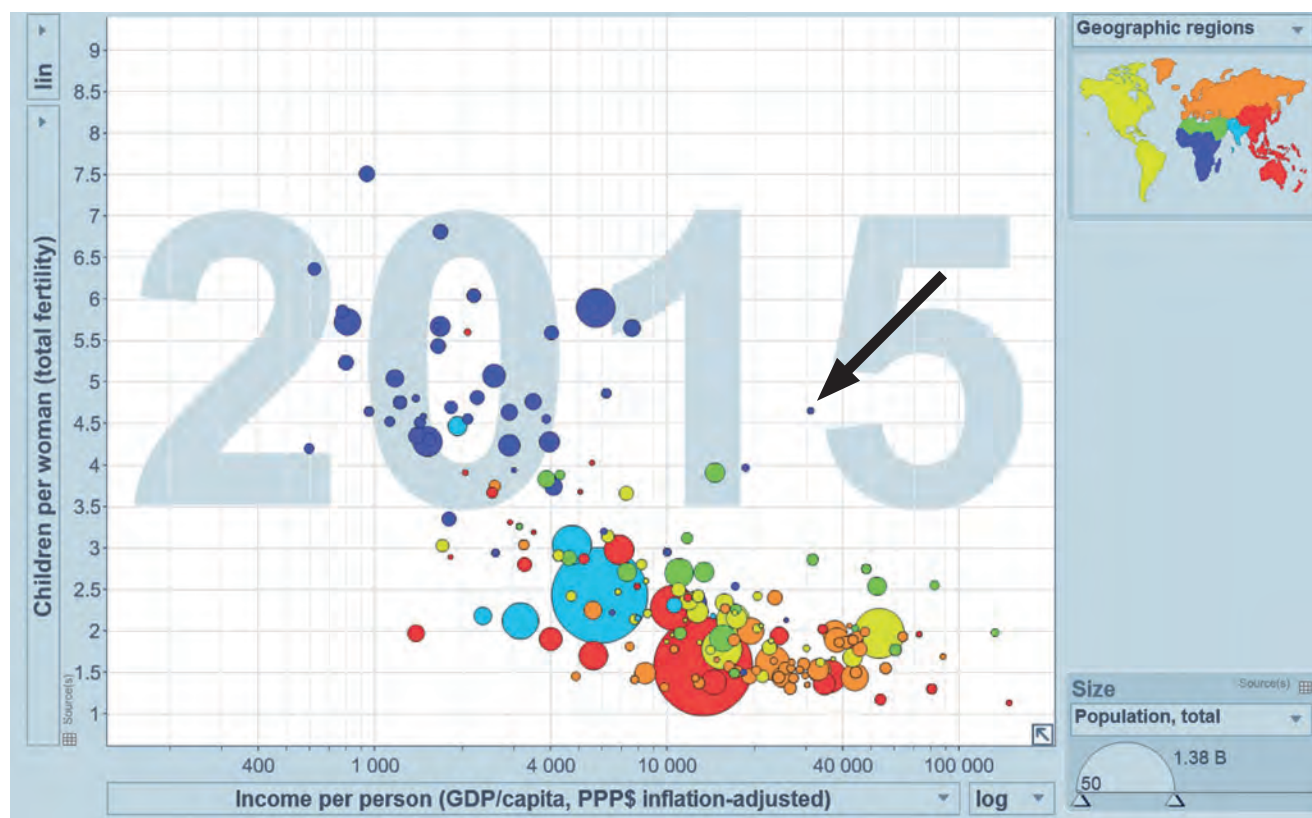
Figure 10. *GDP per capita and total fertility for all countries*

Source: Gapminder; CC-BY-SA-3.0

37 **From Figure 10, which region of the world typically experiences high total fertility and low GDP per capita?**

A Australia

B Europe and Central Asia

C North Africa and the Middle East

D North and South America

E Sub-Saharan Africa

38 **Which generalisation about total fertility is correct, based on the data in Figure 10?**

A As GDP per capita increases, total fertility decreases.

B The higher a country's total GDP, the smaller total fertility will be.

C The larger the population, the higher total fertility will be.

D Total fertility increases with GDP per capita.

E Total fertility rates are similar in different regions of the world.

39 **Total fertility fits within which category of indicator?**

A demographic

B economic

C educational

D environmental

E social

40 **The arrow in Figure 10 points to the dot for Equatorial Guinea. What would explain why this country falls outside the general pattern?**

A Corruption has meant that increased revenue from oil resources has not improved general living conditions.

B Increased spending on the education of girls has resulted in women deciding to have more children.

C Increasing poverty has meant people have large families to support them in old age.

D Women have increasing numbers of children because of religions traditions.

E Worsening income inequality has meant people can only afford small families.

Stop at Question 40 if you are in **Year 9 or 10**. Others continue answering questions.
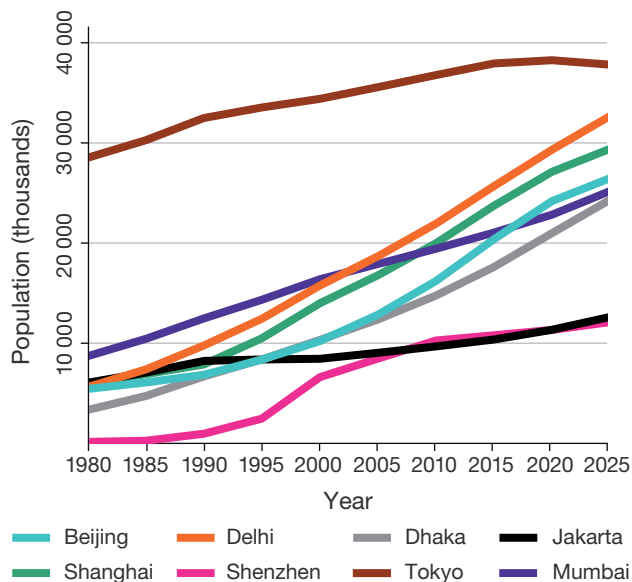
Figure 11. *Population of selected Asian cities from 1980 to 2025*   Source: United Nations Population Division

Figure 12. *Population pyramid, 2015*
Source: Metropolitan Bureau of Policy and Information

41 **The most accurate description of a megacity is:**

A   a capital city with a population of over 4 million

B   a centre of global economic and cultural authority

C   a conurbation with a population of over 7 million

D   a metropolitan area with a population of over ten million

E   a rural agglomeration with a population of over 15 million

42 **From Figure 11, which of these cities had the fastest growth rate between 1995 and 2000?**

A   Delhi

B   Mumbai

C   Shanghai

D   Shenzen

E   Tokyo

43 **From Figure 11, approximately how many people were added to Shanghai's population between 2000 and 2015?**

A   10,000

B   23,000

C   2.3 million

D   10 million

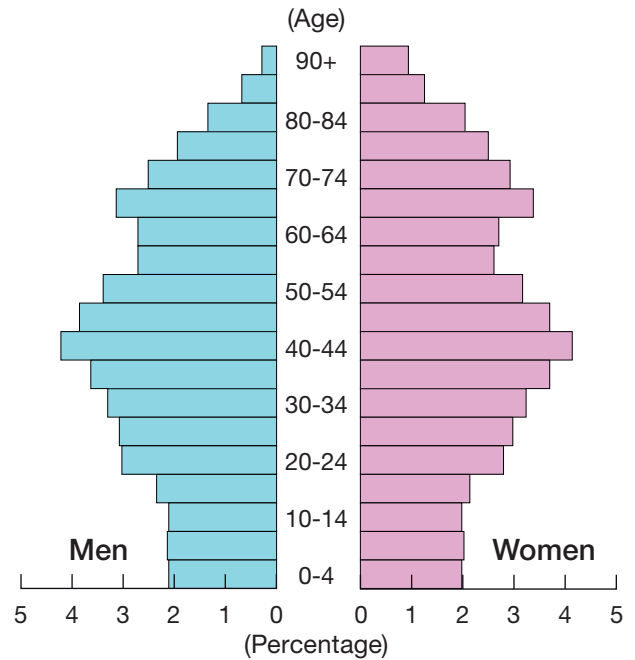E   23 million

44 **If the predicted growth rates between 2020 and 2025 (as shown in Figure 11) continue for the following ten years, which city will have the largest population by 2035?**

A   Delhi

B   Dhaka

C   Mumbai

D   Shanghai

E   Tokyo

45 **The population pyramid in Figure 12 is of which city in Figure 11?**

A   Delhi

B   Dhaka

C   Jakarta

D   Mumbai

E   Tokyo

46 **If the city in the population pyramid (Figure 12) was represented in the graph in Figure 10, where would its dot most likely be?**

A   lower left quarter

B   lower right quarter

C   upper left quarter

D   upper middle

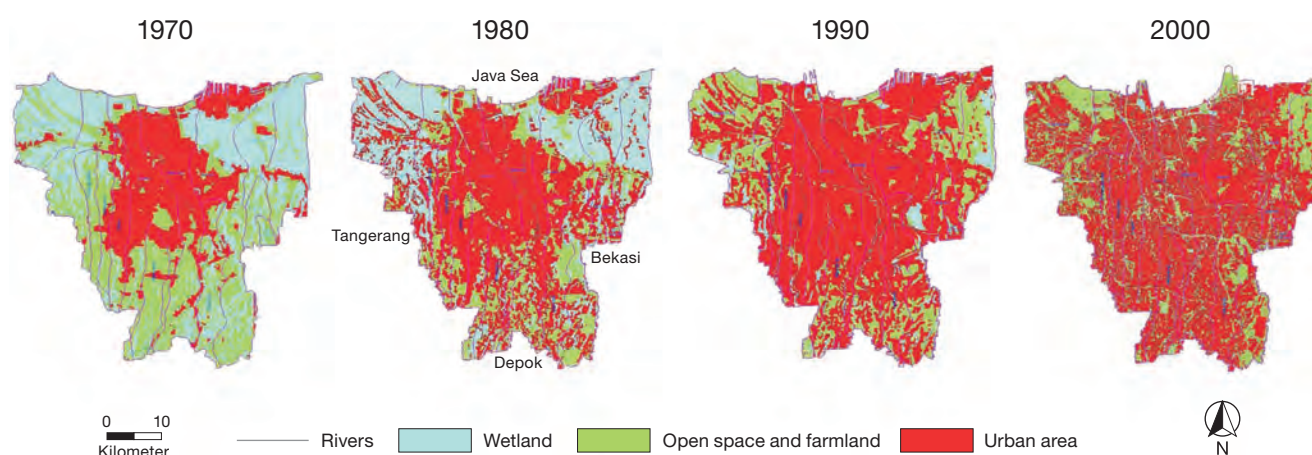E   upper right quarter

Figure 13. Land use change in Jakarta Special Capital Region, 1970-2000 — *Source: World Bank*

Figure 14. *View of Jakarta*
© Jonathan McIntosh; CC-BY-2.0

Figure 15. *East Cipinang, Jakarta*
©Jonathan McIntosh; CC-BY-2.0

Table 3. *Jakarta Region (Jabotabek) population by jurisdiction, 2000-2010 (in millions)* — Source: W. Cox, Demographia

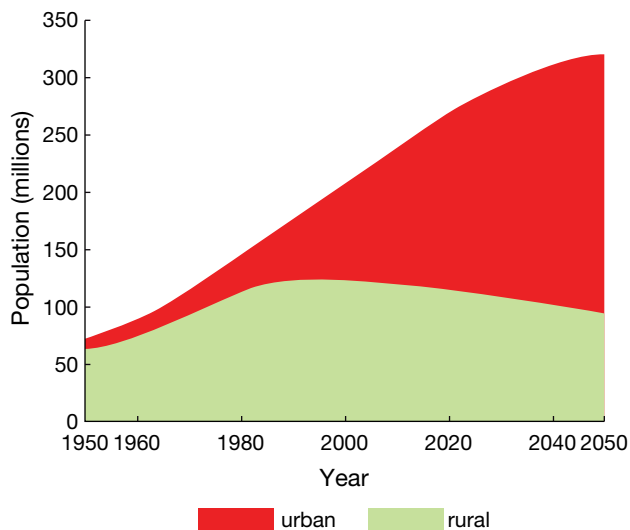|	2000	2010	% Change
Core			
Jakarta Special Capital Region	8.36	9.59	15%
Inner periphery			
City of Tangerang	1.33	1.80	36%
City of Tangerang Selatan	0.80	1.30	63%
City of Depok	1.14	1.75	53%
City of Bekasi	1.66	2.38	43%
Outer periphery			
City of Bogor	0.75	0.95	27%
Bogor Regency	2.92	4.78	64%
Tangerang Regency	2.02	2.84	41%
Bekasi Regency	1.62	2.63	63%
Jabotabek total	**20.60**	**28.02**	**36%**

Figure 16. *Urban and rural population in Indonesia*
Source: United Nations Population Division

To answer Questions 47-50, use
Figures 11, 13-16, Table 3, and your own
knowledge.

47 Which statement about Jakarta's population growth is best supported by the information in the sources?

A   It has been reversed by implementing population policies.

B   It has resulted in a large agglomeration.

C   It is a result of the high birth rate.

D   It is a result of the low death rate.

E   It is a result of urban-rural migration.

48 Socioeconomic dualism exists in Indonesia. Which source best supports this?

A   Figure 13 (maps)

B   Figure 14 (Jakarta photo)

C   Figure 15 (East Cipinang photo)

D   Figure 16 (urban/rural graph)

E   Table 3 (statistics)

49 A correct observation of the spatial expansion of Jakarta, based on the evidence in the sources, is that it has:

A   been contained within the Special Capital Region

B   not occurred in low-lying areas

C   occurred predominantly along the Java Sea

D   preserved Jakarta's surrounding natural environments

E   recently occurred mainly outside the core area of Jakarta

50 Which of the following is not evidenced in the photographs (Figures 14 and 15)?

A   Demand for housing is outstripping the resources available to planning authorities.

B   Inadequate waste disposal services contribute to poor water quality.

C   Informal settlements are located in flood-prone areas.

D   Investments have been made in high-rise apartments and offices.

E   Open space and park areas increase liveability in urban areas.

Thank you for taking part in the 2016
Australian Geography Competition.