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Government of **Western Australia**
School Curriculum and Standards Authority

GEOGRAPHY

ATAR course examination 2024

Marking Key

Marking keys are an explicit statement about what the examining panel expect of candidates when they respond to particular examination items. They help ensure a consistent interpretation of the criteria that guide the awarding of marks.

Section One: Multiple-choice **20% (20 Marks)**

Question	Answer
1	b
2	b
3	a
4	d
5	c
6	b
7	a
8	c
9	d
10	a
11	b
12	c
13	a
14	d
15	c
16	d
17	c
18	a
19	b
20	d

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

Question 21 **(2 marks)**

Name the feature located at GR 396178 and identify **one** of its site characteristics.

Description	Mark
Names the show ground/prepared playing ground	1
Identifies one site characteristic	1
Total	**2**

Answers could include:

Site characteristics could include:
- gently sloping land ranging within 71 m asl to 89 m asl
- overall, a uniform gently sloped area ranging within 71 m asl to 89 m asl
- well-drained land
- alluvial or moderately fertile soils.

Accept other relevant answers.

Question 22 **(3 marks)**

With reference to the area bordered by eastings 37 and 41, and northings 15 and 18, describe **one** relationship between topography and transport. Use map evidence to support your answer.

Description	Mark
Describes a relationship between topography and transport	2
Makes a generalised statement about a relationship between topography and transport	1
Subtotal	**2**
Uses accurate map evidence	1
Subtotal	**1**
Total	**3**

Answers could include:

- the Pemberton-Northcliffe Rd (GR 382160) follows a northerly direction on flat, gently undulating land, avoiding the steep terrain of the Darling Range
- the railway heading south from the town of Pemberton is located on flat land within valleys, parallel to steep slopes as seen at GR 398154, therefore avoiding the steep terrain of the Darling Range.

Accept other relevant answers.

Question 23 **(5 marks)**

In the frame below, construct an annotated sketch map and label the following features on your sketch:

- single rail line
- the urban area
- Pemberton Forest Park
- the golf course
- the dam wall located at GR 418179.

Description	Marks
Locates and labels single rail line	1
Locates and labels the urban area	1
Locates and labels Pemberton Forest Park	1
Locates and labels the golf course	1
Locates and labels the dam wall located at GR 418179	1
Total	**5**

Question 24 **(2 marks)**

(a) Identify the cultural feature at the location marked B on **Source 3:** Pemberton aerial photograph 2024. (1 mark)

Description	Marks
Identifies sewerage treatment as the cultural feature	1
Total	**1**
Note: water processing is not an acceptable answer.	

(b) Calculate the length of the road marked C on **Source 3:** Pemberton aerial photograph 2024. (1 mark)

Description	Marks
125 metres	1
Total	**1**

Question 25 **(5 marks)**

(a) Describe deforestation as a process of land cover change. (2 marks)

Description	Marks
Describes deforestation as a process of land cover change	2
Makes a generalised statement about deforestation as a process of land cover change	1
Total	**2**
Answers could include: Deforestation refers to the conversion of forest to other land uses independently of whether human-induced or not, for example, the removal of vegetation for agricultural, urban or mining land uses.	
Accept other relevant answers.	

(b) Describe **one** difference in forest degradation between **two** regions. Use data from the source to support your answer. (3 marks)

Description	Marks
Describes a difference in forest degradation between two regions	2
Makes a generalised statement about a difference in forest degradation between two regions	1
Subtotal	**2**
Uses relevant data from the source	1
Subtotal	**1**
Total	**3**
Answers could include: Examples from the source include: • Tropical regions record approximately 5.3 Mha. of forest degradation annually compared to temperate regions that record approximately 10.5 Mha. annually • Temperate Latin America records approximately 1.8 Mha. of forest degradation annually compared to Oceania that records approximately 0.6 Mha. annually • Africa records approximately 2.4 Mha. of forest degradation annually for shifting agriculture compared to Southeast Asia that records only 0.5 Mha. annually.	
Accept other relevant answers.	
Note: data from the source refers to the numerical values attributed to a region. Examples from Source 4 must refer to any form of forest degradation and must demonstrate a difference between two regions.	

Question 26 **(3 marks)**

Describe **one** difference in employment trends from 2019 to 2023 between Greater Perth and **one** other region in Western Australia. Use data from the source to support your answer.

Description	Mark
Describes a difference in employment trends from 2019 to 2023 between Greater Perth and another region in Western Australia	2
Makes a generalised statement about a difference in employment trends from 2019 to 2023 between Greater Perth and another region in Western Australia	1
Subtotal	**2**
Uses relevant data from the source	1
Subtotal	**1**
Total	**3**

Answers could include:

Examples from the source could include:

- between 2019 and 2023 employment in Greater Perth increased by 15.1% while in the same period Bunbury employment increased but at a reduced rate of 14.0%
- between 2019 and 2023 Greater Perth increased from 1 061 000 to 1 221 800 workers, while in the same period, Outback areas saw a slight decrease from 124 000 to 120 600 workers.

Accept other relevant answers.

Note: an answer must include evidence of a trend, such as decreases or increases in both areas. Data from the source refers to the numerical values attributed to a region.

Question 27 **(2 marks)**

Define the concept of environment.

Description	Marks
Defines the concept of environment	2
Makes a generalised statement about the concept of environment	1
Total	**2**

Answers could include:

Environment means the living and non-living elements of the Earth's surface and atmosphere. It includes human changes to the Earth's surface; for example, croplands, planted forest, buildings and roads.

Question 28 **(4 marks)**

Outline the impact of growing affluence on the type and rate of land cover change using **one** example to support each answer.

Description	Marks
For each type and rate (2 x 2 marks)	
Outlines an impact of growing affluence on the type or rate of land cover change. Uses a relevant example	2
Makes a generalised statement about an impact of growing affluence on the type or rate of land cover change. Uses no example	1
Total	**4**

Answers could include:

For type of land cover change:
- growing global affluence has led to greater consumption of meat and dairy products, expanding and intensifying agricultural land use and the removal of remnant vegetation
- growing global affluence has driven greater demand for raw materials, contributing to greater land cover change in the form of mining and the removal of remnant vegetation.

For rate of land cover change:
- growing global affluence has rapidly accelerated the area of land being cleared for meat production particularly in developing countries
- growing global affluence and subsequent urbanisation has led to a high rate of urban fringe areas being cleared for urban development.

Accept other relevant answers.

Note: answers must refer specifically to a type of land cover change.

Question 29 **(3 marks)**

Explain the impact on land cover over time of **one** land management practice used by Aboriginal and Torres Strait Islander peoples.

Description	Marks
Explains the impact on land cover over time of one land management practice used by Aboriginal and Torres Strait Islander peoples	3
Describes the impact on land cover over time of one management practice used by Aboriginal and Torres Strait Islander peoples	2
Makes a generalised statement about a land management practice used by Aboriginal and Torres Strait Islander peoples	1
Total	**3**

Answers could include:

Names:
- firestick farming
- mosaic burning
- cool burning.

Impacts:
- created and maintained a mosaic pattern of vegetation that would assist seed germination, encourage new growth, reduce fire load and attract game for hunting. Over time this practice encouraged growth of different plant species
- relatively controlled low intensity burns of varying frequency caused the introduction of new varieties of plants, encouraged vegetation to adapt and caused growth of smaller undergrowth vegetation which slowly transformed dense bush/forest land cover into more open, low vegetated areas
- created access paths through dense, prickly, and thick vegetation which, over time became clear paths and points of communication and travel.

Accept other relevant answers.

Note: answers need to show how the land management practice has impacted land cover over time.

Question 30 **(2 marks)**

Define the process of land use planning.

Description	Marks
Defines the process of land use planning	2
Makes a generalised statement about the process of land use planning	1
Total	**2**

Answers could include:

Land use planning refers to planning policies and regulations that play an important role in shaping the land uses and characteristics of urban and rural places. Land use planning includes land use zoning, transport planning, grouping of compatible land uses, creation of buffer zones between incompatible land uses, determining residential densities, renewal project and planning for future growth.

Accept other relevant answers.

Question 31 **(3 marks)**

Outline **one** example of the environmental interdependence of urban and rural places.

Description	Marks
Outlines an example of environmental interdependence between urban and rural places and clearly demonstrates the two-way relationship	3
Outlines briefly an example of environmental interdependence between urban and rural places and implies the two-way relationship	2
Identifies an example of environmental dependence between urban and rural places	1
Total	**3**

Answers could include:

Environmental interdependence examples:

- rural places provide urban places with most ecosystem provisioning services such as water, while urban areas provide the policy and management framework to protect these ecosystem services for both rural and urban populations
- significant environmental areas such as national parks, conservation areas and reserves are often located in rural areas where rural populations become the custodians. Urban places provide the administration so that they can be effectively managed, and the financial base required to protect the integrity and viability of these areas for urban populations to visit.

Accept other relevant answers.

Note: examples of environmental interdependence must demonstrate a two-way flow between urban and rural places.

Question 32 **(6 marks)**

Explain why **two** of the following each present a challenge to places located outside major cities in Australia. Use **one** example to support each answer.

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

Description	Marks
For each challenge (2 x 3 marks)	
Explains the challenge to places located outside of major cities in Australia. Uses a relevant example to support the explanation	3
Describes the challenge to places located outside of major cities in Australia. Uses a general example	2
Makes a generalised statement about the challenge to places located outside of major cities in Australia. Uses no example	1
Total	**6**

Answers could include:

For economic restructuring:
- housing shortage due to demands
- lower revenue base for local development
- unemployment/underemployment
- adaptive capacity of population.

For land use conflicts:
- incompatibility between agricultural and residential activities, e.g. spraying chemical adjacent to recreational areas
- loss of visual amenity
- impact on natural vegetation from population and/or urban growth
- residential land uses competing for prime agricultural land.

For declining political influence:
- reduced political voice due to population loss within an area
- reduced access to representatives due to increasing size of electorates
- unabated global forces damaging regional areas
- decline in agriculture workforce and an increase in service economies and population in cities.

Accept other relevant answers.

Section Three: Extended response **40% (40 Marks)**

Question 33 **(20 marks)**

(a) Describe the key elements of **two** of the following natural systems:

- heat budget, including the greenhouse effect
- hydrological cycle
- carbon cycle
- atmospheric circulation. (8 marks)

Description	Marks
For each natural systems (2 x 4 marks)	
Describes the elements of a natural system Presents a wide range of appropriate supporting examples to develop and support the description. Applies accurate and relevant geographical terminology and concepts to develop a cohesive and concise response	4
Describes briefly the elements of a natural system Presents a range of appropriate supporting examples to develop and support the description. Applies relevant geographical terminology and concepts to develop a cohesive response	3
Outlines a natural system Presents some relevant examples to support the outline. Uses some relevant geographical terminology and concepts	2
Makes a generalised statement about a natural system Limited examples to support statements and generalisations. Limited or no use of geographical terminology and concepts, in a largely unstructured response	1
Total	**8**
Answers could include: For hydrological cycle: • description of evaporation, condensation, advection, precipitation and transpiration • water vapour assists in natural greenhouse effect thus warming the atmosphere. For atmospheric circulation: • atmospheric cells – Hadley, Ferrel and Polar and distribution of heat and precipitation • seasonal movement of pressure belts within the annual variations in atmospheric circulation influences location, timing and amounts of precipitation.	
Accept other relevant answers.	

or

Describe the key elements of ecosystem structure and dynamics, including:

- food chains and webs
- biomass
- trophic levels
- flows of matter and energy. (8 marks)

Description	Marks
Describes the key elements of ecosystem structure and dynamics Presents a wide range of appropriate supporting examples to develop and strengthen the description. Applies accurate and relevant geographical terminology and concepts to develop a cohesive and concise response	7–8
Describes briefly the key elements of ecosystem structure and dynamics Presents a range of appropriate supporting examples to develop and strengthen the description. Applies relevant geographical terminology and concepts to develop a cohesive response	5–6
Outlines the key elements of ecosystem structure and dynamics Presents some relevant examples to support the outline. Uses some relevant geographical terminology and concepts	3–4
Makes generalised statements about the key elements of ecosystem structure and dynamics Limited evidence to support statements and generalisations. Limited or no use of geographical terminology and concepts, in a largely unstructured response	1–2
Total	**8**

Answers could include:

For food chains and webs:
- description of producers (autotrophs), consumers (heterotrophs – herbivores, carnivores, omnivores), decomposers (detritivores)
- flow of energy through chain and/or web.

For trophic levels:
- the position an organism occupies in a food chain
- the bottom level or first trophic level is made up of primary producers or autotrophs
- the next level are the primary consumers who consume organisms in the previous level
- high order consumers, typically predatory carnivores, make up the highest trophic level
- the number of organisms in each successive trophic level typically decrease in number.

Accept other relevant answers.

Note: ‘flows of matter and energy’ and ‘biomass’ may be described within the context of ‘food chains and webs’ or ‘trophic levels’ and should be awarded marks.

Question 33 (continued)

(b) Discuss how **two** strategies aim to mitigate either global climate change **or** loss of biodiversity. (12 marks)

Description	Marks
For each strategy (2 x 6 marks)	
Discusses how a strategy has, or aims to mitigate either global climate change or loss of biodiversity Presents a wide range of appropriate supporting evidence and examples to develop and strengthen the discussion. Applies accurate and relevant geographical terminology and concepts to develop a cohesive and concise response	5–6
Explains how a strategy has, or aims to mitigate either global climate change or loss of biodiversity Presents some supporting evidence and examples to develop and strengthen the explanation. Applies relevant geographical terminology and concepts to develop a cohesive response	3–4
Makes generalised statements about a way in which a strategy has or aims to mitigate either global climate change or loss of biodiversity Limited evidence to support statements and generalisations. Limited or no use of geographical terminology and concepts in a largely unstructured response	1–2
Total	**12**

Answers could include:

Mitigation involves the implementation of the strategies to eliminate or minimise the severity of a hazard or similarly adverse occurrence.

For climate change:
- alternative energy sources (at varying scales)
- dietary changes
- carbon capture and storage schemes
- emission trading schemes
- carbon emission targets
- carbon taxes
- alternative agricultural practices
- development of alternative fuels.

For loss of biodiversity:
- seed and gene banks
- dietary changes
- breeding programs
- conservation strategies
- preservation strategies
- restoration and/or revegetation strategies
- use of quotas, restrictive licencing and seasonal restrictions.

Accept other relevant answers.

Question 34 **(20 marks)**

(a) Describe **one** major type of evidence through geological time and **one** major type of evidence in recent human history for either climate change **or** loss of biodiversity.

(8 marks)

Description	Marks
For each major type of evidence (2 x 4 marks)	
Describes a major type of evidence through geological time or in recent human history for either climate change or loss of biodiversity Presents a wide range of appropriate supporting evidence and examples to develop and strengthen the description. Applies accurate and relevant geographical terminology and concepts to develop a cohesive and concise response	4
Describes briefly a major type of evidence through geological time or in recent human history for either climate change or loss of biodiversity Presents a range of appropriate supporting evidence and examples to develop and strengthen the description. Applies relevant geographical terminology and concepts to develop a cohesive response	3
Outlines a major type of evidence through geological time or in recent human history for either climate change or loss of biodiversity Presents some relevant evidence and examples to support the outline. Uses some relevant geographical terminology and concepts	2
Makes a generalised statement about a major type of evidence through geological time or in recent human history for either climate change or loss of biodiversity Limited evidence to support statements and generalisations. Limited or no use of geographical terminology and concepts, in a largely unstructured response	1
Total	**8**

Answers could include:

Major type of evidence through geological time for climate change:
- proxy data developed to establish past climate conditions
- coral cores demonstrating changes in temperature, increases/decreases in sea-level rise, and ocean acidification
- pollen sediment demonstrating changes to vegetation due to climate change
- ocean sediments showing changes in shell and micro-organisms due to climate and ocean acidification
- ice cores demonstrating changes in atmospheric gas concentrations and therefore temperature
- tree rings showing seasonal variation in climate and change over time.

Major type of evidence in recent human history for climate change:
- direct data which uses instruments to measure changes in climate
- temperature records which demonstrate changes in average surface temperature of earth (increase of 1.1 degrees Celsius)
- records that demonstrate changes in atmospheric composition – methane, nitrous oxide, carbon dioxide and synthetic greenhouse gases
- temperature data records which demonstrate changes to ocean temperatures
- ocean data that demonstrates changes to sea level and rates of sea level rise
- ocean data that demonstrates ocean acidification and its impacts.

Question 34 (continued)

Major type of evidence through geological time for loss of biodiversity: • evidence of mass extinction events such as 65 million years ago, 75% plant and animal species impacted • fossil evidence from between layers of rock strata that demonstrate change to, and loss of biodiversity • fossil evidence from plants, insects, mammals, burned tree trunks and conifer branches • evidence that the Chicxulub asteroid impact reduced biodiversity levels. Major type of evidence in recent human history for loss of biodiversity: • records that demonstrate changes to, and loss of biodiversity due to climate change • records that demonstrate a decline of genetic diversity • records that demonstrate land cover change and habitat destruction • records that demonstrate the extinction of food varieties.
Accept other relevant answers.
Note: answer needs to demonstrate how the selected type of evidence provides relevant information for the time-period in relation to climate change or biodiversity loss.

(b) Evaluate **one** strategy designed to address the impacts of land cover change, using the social **and** economic factors of sustainability. (12 marks)

Description	Marks
For each of the factors of sustainability (2 x 6 marks)	
Evaluates the selected strategy designed to address the impacts of land cover change, using either social or economic factors of sustainability Presents a wide range of appropriate supporting evidence and examples to develop and strengthen the evaluation. Applies accurate and relevant geographical terminology and concepts to develop a cohesive and concise response	5–6
Explains the selected strategy designed to address the impacts of land cover change, using either social or economic factors of sustainability Presents some supporting evidence and examples to develop and strengthen the explanation. Applies relevant geographical terminology and concepts to develop a cohesive response	3–4
Makes generalised statements about the selected strategy designed to address the impacts of land cover change or refers generally to either social or economic factors of sustainability relating to the strategy Limited evidence to support statements and generalisations. Limited or no use of geographical terminology and concepts in a largely unstructured response	1–2
Total	**12**

Answers could include:

Sustainability refers to meeting the needs of current and future generations through simultaneous environmental, social and economic adaptation and improvement.

Strategies in place to reduce impacts of land cover change, including preservation strategies/programs, regulation and restrictions, use of reserves, and policy and legislation.

Dirk Hartog Island National Park: Return to 1616
Social evaluations:
- community engagement, half yearly updates
- education program, interactive web based primary school package
- community arts project – conservation and removal of feral species education
- heritage agreement with Yamatji Marlpa Aboriginal Corporation.

Economic evaluations:
- funding of grants – Caring for our Country, Gorgon Barrow Island Net Conservation Benefits fund
- removal of domesticated sheep, goats and feral cats
- Minister for Environment approved funding; employment of manager, project officer and local Aboriginal trainee.

Yarra Yarra Biodiversity Corridor
Social evaluations:
- training and educational opportunities – Morawa Agricultural College
- carbon neutral – partnered with 11 local and national organisations
- five indigenous archaeological sites registered
- mental health benefits from community connection – regional attachment and association to area.

Question 34 (continued)

Economic evaluations:
- local employment opportunities
- carbon neutral – working agreement with Midwest Employment and Economic Development Aboriginal Corporation
- contributes up to $63 million in biodiversity value and $30 million in economic value
- development of new knowledge and skills
- carbon credits through reforestation – 'plant a tree' program.

Gondwana Link
Social evaluations:
- visits by groups to sites, email communication with regular updates on program
- academic and independent experts study region and collect data/survey sites
- volunteer based dependence promotes community group involvement and 'buy-in' approach to the social sustainability of the program
- parts of the region are declared as an Indigenous Protected Area managed by Ngadji Conservation Aboriginal Corporation
- Heartland Journeys initiative website socially involves people to learn about importance of conservation of the region.

Economic evaluations:
- privately owned land self-funded or supported by volunteers – Chingarrup Sanctuary; Chereninup Creek Reserve; Nowanup reserve
- minor links to tourism to help generate income (early stages – low income)
- commercial funding – carbon sequestration credits and investment in sandalwood.

Accept other relevant answers.

Note: evaluations must appraise the strategy carefully and, using the factors of social and economic sustainability, draw a conclusion regarding the value of the strategy in addressing the impacts of land cover change.

Question 35 **(20 marks)**

(a) Describe the views of **two** stakeholder groups related to **one** challenge for either metropolitan Perth **or** a regional urban centre in Western Australia. (8 marks)

Description	Marks
For each stakeholder group (2 x 4 marks)	
Describes the views of a stakeholder group related to a challenge for either metropolitan Perth or a regional urban centre in Western Australia Presents a wide range of appropriate supporting evidence and examples to develop and strengthen the description. Applies accurate and relevant geographical terminology and concepts to develop a cohesive and concise response	4
Describes briefly the views of a stakeholder group related to a challenge for either metropolitan Perth or a regional urban centre in Western Australia Presents a range of appropriate supporting evidence and examples to develop and strengthen the description. Applies relevant geographical terminology and concepts to develop a cohesive response	3
Outlines the views of a stakeholder group related to a challenge for either metropolitan Perth or a regional urban centre in Western Australia Presents some relevant evidence and examples to support the outline. Uses some relevant geographical terminology and concepts	2
Makes a generalised statement about the views of a stakeholder group related to a challenge for either metropolitan Perth or a regional urban centre in Western Australia Limited evidence to support statements and generalisations. Limited or no use of geographical terminology and concepts, in a largely unstructured response	1
Total	**8**

Answers could include:

Stakeholder groups can include political parties, government departments/agencies, community organisations, industry groups, and interest groups who hold a view and are affected by the challenge. They include groups who may contribute to the decision making and planning process.

Only accept one of the following challenges:

- housing
- economic restructuring
- employment
- transportation
- environmental degradation
- waste management
- land abandonment
- urban sprawl
- socio-spatial inequality
- social exclusions
- water supply.

Question 35 (continued)

Housing strategies stakeholder groups: • charity/religious organisations working in the housing/shelter sector • housing and homelessness government agencies • not for profit affordable housing providers • building industry associations. Urban sprawl stakeholder groups: • local and state governments • transport operators/authorities • land developers • major environmental advocate groups. Water supply stakeholder groups: • water regulators • local and state governments • industry associations and representatives • land developers.
Accept other relevant answers.
Note: for the purpose of Unit 4, individuals and generalised groups (e.g. car drivers, residents, cyclists) are not considered stakeholder groups.

(b) Evaluate the extent to which **one** planning strategy used to address **one** challenge in a megacity, has or will enhance the place's liveability. (12 marks)

Description	Marks
Evaluates the extent to which one planning strategy used to address one challenge in a megacity has, or will enhance the place's liveability Presents a wide range of appropriate supporting evidence and examples to develop and strengthen the evaluation. Applies accurate and relevant geographical terminology and concepts to develop a cohesive and concise response	11–12
Evaluates briefly the extent to which one planning strategy used to address one challenge in a megacity, has or will enhance the place's liveability Presents a range of appropriate supporting evidence and examples to develop and strengthen the evaluation. Applies relevant geographical terminology and concepts to develop a cohesive response	9–10
Explains the extent to which one planning strategy used to address one challenge in a megacity, has or will enhance the place's liveability Presents some appropriate supporting evidence and examples to develop the explanation. Uses relevant geographical terminology and concepts to develop a cohesive response	7–8
Explains briefly the extent to which one planning strategy used to address one challenge in a megacity, has or will enhance the place's liveability Presents some relevant evidence and examples to support the explanation. The use of some relevant geographical terminology and concepts help to develop a mostly articulate answer	5–6
Describes the extent to which one planning strategy used to address one challenge in a megacity, has or will enhance the place's liveability Presents limited evidence and/or generalised examples to support the description. There is limited use of geographical terminology and concepts	3–4
Makes generalised statements about the extent to which one planning strategy used to address one challenge in a megacity, has or will enhance the place's liveability Limited or no evidence to support statements and generalisations. Limited or no use of geographical terminology and concepts, in a largely unstructured response	1–2
Total	**12**

Answers could include:

Liveability refers to the quality of space and the built environment. The concept of liveability has been linked to a range of factors; for example, quality of life, health, sense of safety, access to services, cost of living, comfortable living standards, mobility and transport, air quality and social participation.

Question 35 (continued)

Only accept one of the following challenges:
- housing
- economic restructuring
- employment
- transportation
- environmental degradation
- waste management
- land abandonment
- urban sprawl
- socio-spatial inequality
- social exclusions
- water supply.

Transportation:
- active transport strategies promote active travel which increases the health outcomes for residents of an area
- public transport strategies can provide equitable and inclusive access to employment, education, health services and facilities
- active transport and public transport strategies can reduce local emissions and noise which may improve the quality of the local environment
- active transport and public transport strategies may reduce the economic burden of owning, maintaining and driving a car.

Land abandonment:
- reuse/repurposing may increase social interactions and revitalisation of an area
- reuse/repurposing may strengthen civic functions of an area
- community led cooperative action may lead to increases in relevant services and community enterprise
- land use planning led gentrification may reduce crime but displace existing communities.

Water supply:
- water reuse strategies may be used to enhance the amenity of an area
- water supply strategies may provide a stimulus for economic activity and subsequently create local employment opportunities
- water sensitive urban design strategies may contribute to positive interaction with sustainable natural environments
- water management strategies may provide opportunities for recreation and sport activities.

Accept other relevant answers.

Note: evaluations must appraise the planning strategy carefully and draw a conclusion regarding the value of the strategy in enhancing a place's liveability.

Question 36 **(20 marks)**

(a) Describe the internal **and** external morphology of a megacity. (8 marks)

Description	Marks
Describes the internal and external morphology of a megacity Presents a wide range of appropriate supporting evidence and examples to develop and strengthen the description. Applies accurate and relevant geographical terminology and concepts to develop a cohesive and concise response	7–8
Describes briefly the internal and external morphology of a megacity Presents a range of appropriate supporting evidence and examples to develop and strengthen the description. Applies relevant geographical terminology and concepts to develop a cohesive response	5–6
Outlines the internal and/or external morphology of a megacity Presents some relevant evidence and examples to support the outline. Uses some relevant geographical terminology and concepts	3–4
Makes generalised statements about the internal or external morphology of a megacity Limited evidence to support statements and generalisations. Limited or no use of geographical terminology and concepts, in a largely unstructured response	1–2
Total	**8**

Answers could include:

Internal morphology refers to functional land uses and processes which create the outer boundary of an urban area.

For internal morphology:
- Central business districts
- Outer business districts
- Inner mixed zones
- Residential zones
- Special purpose zones
- Light industrial/manufacturing
- Heavy industrial/manufacturing
- Rural urban fringe.

External morphology refers to the outer boundary or shape of an urban area.

For external morphology:
- shape – multinuclei, irregular, regular, linear or stellate
- size or extent between boundaries
- area measured in km^2 or hectares, compact or sprawled
- central cores and outer nodes, high or low density
- outer boundaries interaction with other land uses.

Accept other relevant answers.

Question 36 (continued)

(b) Evaluate the extent to which **one** planning strategy used to address **one** challenge in either metropolitan Perth **or** a regional urban centre in Western Australia, has or will enhance the place's liveability. (12 marks)

Description	Marks
Evaluates the extent to which one planning strategy used to address one challenge in either metropolitan Perth or a regional urban centre in Western Australia, has or will enhance the place's liveability Presents a wide range of appropriate supporting evidence and examples to develop and strengthen the evaluation. Applies accurate and relevant geographical terminology and concepts to develop a cohesive and concise response	11–12
Evaluates briefly the extent to which one planning strategy used to address one challenge in either metropolitan Perth or a regional urban centre in Western Australia, has or will enhance the place's liveability Presents a range of appropriate supporting evidence and examples to develop and strengthen the evaluation. Applies relevant geographical terminology and concepts to develop a cohesive response	9–10
Explains the extent to which one planning strategy used to address one challenge in either metropolitan Perth or a regional urban centre in Western Australia, has or will enhance the place's liveability Presents some appropriate supporting evidence and examples to develop the explanation. Uses relevant geographical terminology and concepts to develop a cohesive response	7–8
Explains briefly the extent to which one planning strategy used to address one challenge in either metropolitan Perth or a regional urban centre in Western Australia, has or will enhance the place's liveability Presents some relevant evidence and examples to support the explanation. The use of some relevant geographical terminology and concepts help to develop a mostly articulate answer	5–6
Describes the extent to which one planning strategy used to address one challenge in either metropolitan Perth or a regional urban centre in Western Australia, has or will enhance the place's liveability Presents limited evidence and/or generalised examples to support the description. There is limited use of geographical terminology and concepts	3–4
Makes generalised statements about the extent to which one planning strategy used to address one challenge in either metropolitan Perth or a regional urban centre in Western Australia, has or will enhance the place's liveability Limited or no evidence to support statements and generalisations. Limited or no use of geographical terminology and concepts, in a largely unstructured response	1–2
Total	**12**

Answers could include:

Liveability refers to the quality of space and the built environment. The concept of liveability has been linked to a range of factors; for example, quality of life, health, sense of safety, access to services, cost of living, comfortable living standards, mobility and transport, air quality and social participation.

Only accept one of the following challenges:
- housing
- economic restructuring
- employment
- transportation
- environmental degradation
- waste management
- land abandonment
- urban sprawl
- socio-spatial inequality
- social exclusions
- water supply.

Transportation:
- active transport strategies promote active travel which increases the health outcomes for residents of an area
- public transport strategies can provide equitable and inclusive access to employment, education, health services and facilities
- active transport and public transport strategies can reduce local emissions and noise which may improve the quality of the local environment
- active transport and public transport strategies may reduce the economic burden of owning, maintaining and driving a car.

Land abandonment:
- reuse/repurposing may increase social interactions and revitalisation of an area
- reuse/repurposing may strengthen civic functions of an area
- community led cooperative action may lead to increases in relevant services and community enterprise
- land use planning led gentrification may reduce crime but displace existing communities.

Water supply:
- water reuse strategies may be used to enhance the amenity of an area
- water supply strategies may provide a stimulus for economic activity and subsequently create local employment opportunities
- water sensitive urban design strategies may contribute to positive interaction with sustainable natural environments
- water management strategies may provide opportunities for recreation and sport activities.

Accept other relevant answers.

Note: evaluations must appraise the strategy carefully and draw a conclusion regarding how it will enhance the place's liveability.

ACKNOWLEDGEMENTS

Question 25(a) Adapted from: Food and Agriculture Organisation of the United Nations. (2020). *Global Forest Resources Assessment: Terms and Definitions*. Retrieved August, 2024, from https://openknowledge.fao.org/server/api/core/bitstreams/531a9e1b-596d-4b07-b9fd-3103fb4d0e72/content

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