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2

91243



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Level 2 Geography 2022

91243 Apply geography concepts and skills to demonstrate understanding of a given environment

Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Apply geography concepts and skills to demonstrate understanding of a given environment.	Apply geography concepts and skills with precision to demonstrate in-depth understanding of a given environment.	Apply geography concepts and skills with precision to demonstrate comprehensive understanding of a given environment.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL parts of the question in this booklet.

Pull out Resource Booklet 91243R from the centre of this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–11 in the correct order and that none of these pages is blank.

Do not write in any cross-hatched area (✖). This area may be cut off when the booklet is marked.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

Merit

TOTAL

06

ASSESSOR'S USE ONLY

INSTRUCTIONS

Read the resource booklet about the Dead Sea before answering the question in this booklet.

Completing parts (a) to (c) using the related resources should enable you to gain an understanding of the Dead Sea. In part (d) you are required to explain the interaction between people and the environment, and how this affects the sustainability of the Dead Sea.

QUESTION

- (a) Refer to **Resource A** (Figures 1 to 4) on pages 4 and 5 of the resource booklet, which show features of the Dead Sea.

(i) **Précis map of the Dead Sea**

Complete the map on the page opposite by accurately locating and labelling the following:

- the Mediterranean Sea
- the Jordan River and its direction of flow
- the boundaries of the Jordan Rift Valley
- the present-day area of the Southern Basin (evaporation ponds)
- the present-day area of the Northern Basin.

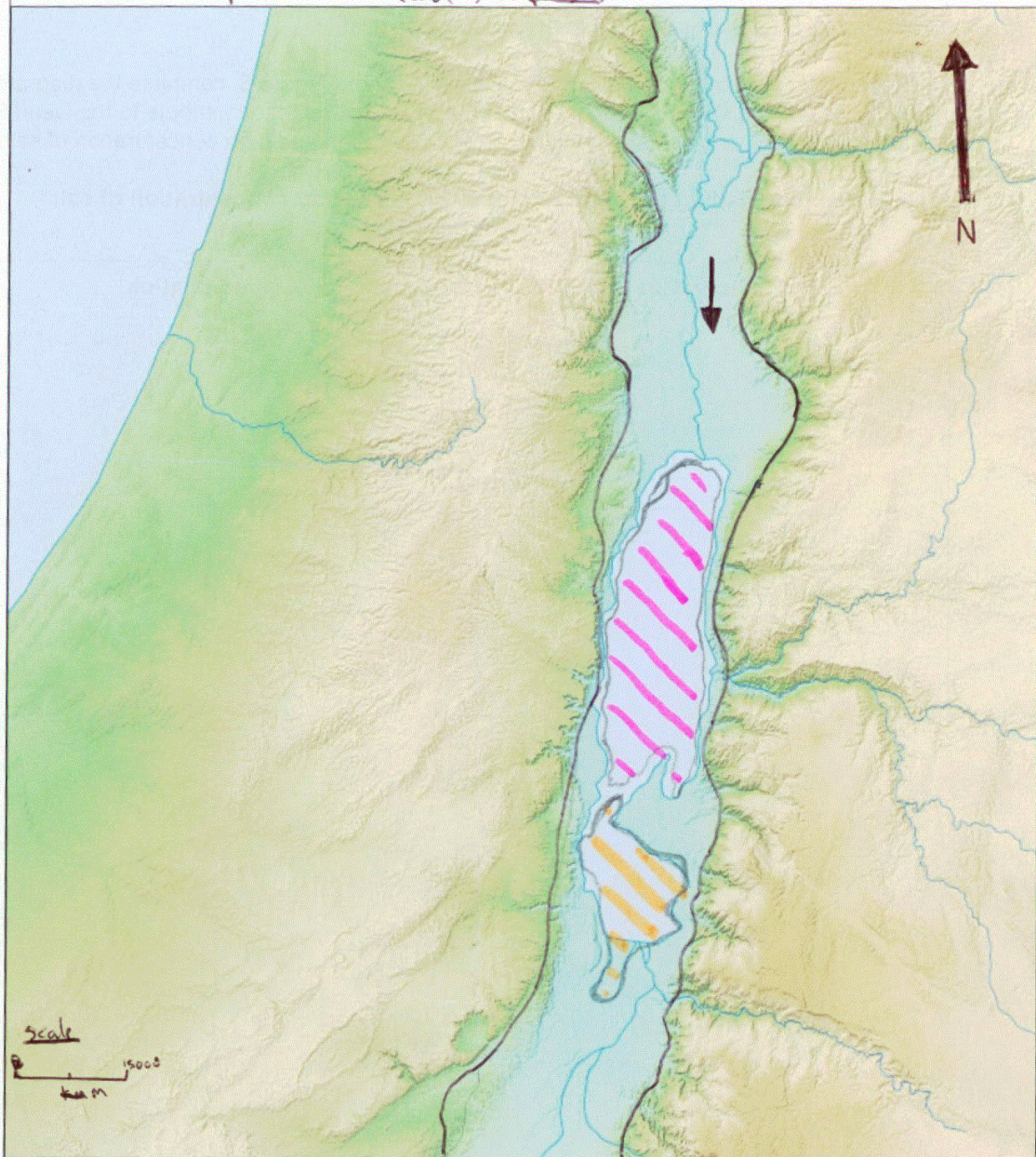
Give the map a suitable title, scale, north arrow, and complete the key.

(ii) **Key features of the Jordan Rift Valley**

Using specific information, describe the key physical features of the Jordan Rift Valley and surrounding area.

The deepest point of the Jordan Rift valley is ~~420m~~ 430m below the sea level. The 2 boundary lines of the Jordan Rift Valley range between 600-800m above sea level. To the West of the valley is Jerusalem, ~~to the East of the valley is~~ Hebron, Beer-sheva, the Zé'elim stream, Judea Samaria and Negev. The Dead-Sea and Jordan river are within the Jordan Rift valley.

Title: précis map of the Dead Sea (~~map~~)



Key:



Dead Sea 1931



Mediterranean Sea



Jordan River



Jordan Rift valley boundary lines



present-day Northern basin



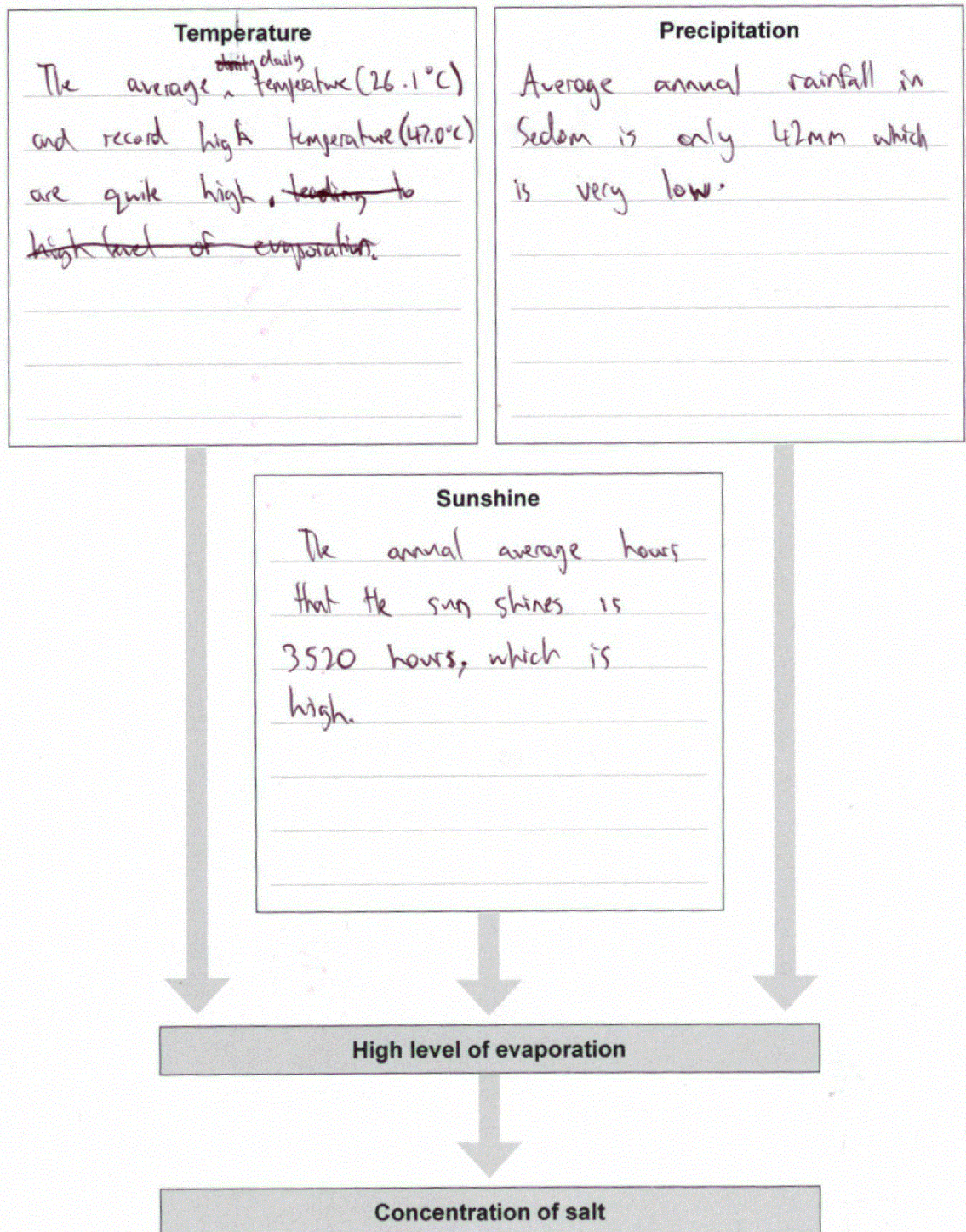
present-day southern basin
(Evaporation Ponds)

(b) Climate and the Dead Sea environment

Refer to **Resource B** on pages 6 and 7 of the resource booklet.

- (i) Using specific information on Sedom (the Dead Sea) from Figure 6, complete the diagram below by describing ONE feature of each of the three factors that contribute to the Dead Sea having an environment with a very high rate of evaporation and high concentration of salt.

Factors leading to a high rate of evaporation and concentration of salt in the Dead Sea



- (ii) Using specific information from Figure 7, describe the pattern of rainfall in the Dead Sea catchment (drainage area) and explain why the Jordan River is important to the supply of water to the Dead Sea.

Around the Northern, Eastern and Western perimeter of the Dead Sea, it only received about 100mm. The further outwards that you travel from the Dead Sea, the amount of rainfall increases, where in Jerusalem they received about 600mm of rainfall. To the North, there is where the greatest amount of rainfall occurs, where the Sea of Galilee receives about 400-600mm of rainfall. As the rainfall near the Dead Sea is quite low (approx. 100mm), the Jordan river is important as it would be the main supply of water. (Dead sea relies on Jordan River for water instead of rain).

- (iii) Refer to the concepts of **environment** and **pattern** on page 2 of the resource booklet.

Choose (✓) ONE concept and explain how it relates to either part (b)(i) or (b)(ii).

☒ Environment ☐ Pattern

Environments can be natural or cultural, having particular characteristics and features which can be the result of natural and/or cultural processes/interactions. This concept relates to part (b)(i) as because of ^{the} natural processes shaping the environment in Sodom. The high temperatures, low rainfall and long hours of sunshine have resulted in ^{an environment with} ~~the~~ high levels of evaporation and concentration of salt in the Dead Sea. This environment is also very arid due to these 3 factors.

(c) **Shrinkage of the Dead Sea**

Refer to **Resource C** on pages 8 and 9 of the resource booklet.

- (i) Using specific information from Figure 8, describe the changing rate of decline in the level of the Dead Sea from 1930 to 2012.

From 1900 to around ~~1935~~ 1935, the Dead sea was between 390 to 394 metres below actual sea level. From here it begins to decline, where between 1935 and 1970, the Dead sea was about 394-398 metres below actual sea level. The rate of decline steepens, where between 1970-1985, the Dead sea level drops to about 398-402 metres below actual sea level. There is a very slight increase around 1990, but declines rapidly shortly after, where by ~~2010~~ 2012, the water level of the Dead Sea is about 426 metres below actual sea level.

- (ii) Using specific information from Figure 9, state the following:

- The total percentage of water diverted from the Jordan River for drinking water:

Approximately 85% water diverted

- The total percentage of water diverted from the Jordan River for each of the two countries taking the most water.

Israel: 45% of water from River

Jordan: 39% of water from River

- (iii) Using specific information from Figure 10, describe the consequences for the Dead Sea of water being diverted away from the Jordan River.

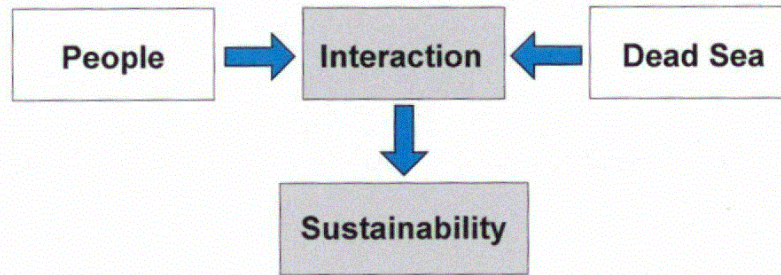
The total amount of water diverted from the Jordan river is 1700 million cubic metres (MCM), meaning only 25 MCM of water ~~is~~ of the Jordan river ~~enters~~ the Dead Sea. This contributes to the total input of 310 MCM of water ~~at~~ into the Dead Sea, and also a total loss of about 985 MCM of water, giving a deficit of 675 MCM annually. This means that more water is lost than gained in the Dead Sea, resulting in the ~~water~~ water level of the Dead Sea declining rapidly. As the Earth is continuing to warm, temperatures are expected to increase, as well as the evaporation rates. Therefore the water level of the Dead Sea will decrease even faster unless change occurs.

(d) **How people affect the sustainability of the Dead Sea**

Explain the interaction between people and the environment, and how this affects the sustainability of the Dead Sea.

In your answer, refer to and integrate information from:

- the geographic concepts of **interaction** and **sustainability**, as well as other concepts on page 2 of the resource booklet
- **Resource D** and all other resources
- information from your answers in parts (a) to (c).



PLANNING

The concept of Interaction refers to the elements of an environment affecting each other and being linked together. It incorporates movement, flows, connections, links and interrelationships, which work together. Landscapes are the visible outcomes of interactions, where interaction can bring about environmental change. People interact with the Dead Sea through use of tourism. The Dead Sea is one of Israel's top tourist attractions, being the lowest point on Earth, the salt water's buoyancy and the benefits of mud baths. Prior to Covid-19, the Dead Sea attracted 2 million international tourists and 650,000 local tourists annually. Tourism doesn't really affect the sustainability of the Dead Sea, however the receding shoreline increases the distance between the hotels and the Dead Sea each year. The adaptation of using buses to transport the tourists to the sea would increase the air pollution, thus increasing the temperature and evaporation rate, affecting the Dead Sea's sustainability negatively. Another way that people interact with the dead sea is ~~water~~ extraction for resources. The Dead Sea provides water for drinking, agriculture and salt extraction. Approximately 1700 million cubic metres (MCM) is extracted from the Jordan River. This means only 25 MCM of water is supplied to the Dead Sea from the Jordan River. This interaction has led to a deficit in water supply for the Dead Sea, resulting in the decreasing water levels. ~~Israel extracts the water~~ is a result of the extraction, over 1000 large sinkholes have formed in the newly exposed shores as the underlying salt is dissolved by the fresh rainwater. These sinkholes pose a danger to people and buildings, where some resorts and hotels have already had to close.

Merit Exemplar 2022

Subject	Level 2 Geography		Standard	91243	Total score	06
Q	Grade score	Annotation				
1	M6	<ul style="list-style-type: none"> A: Map is clearly drawn with accurate conventions. The north point offset to the left is accurate. B i and ii: Climate clearly linked to evaporation/salt concentration with detail. Pattern explained and north/south link is explicit with detail. iii: Concept is explicit but lacking detail to reach M or E level. This answer is at the A level. C: Graph analysis shows the major change (although would have been stronger without mentioning every single change), maths is incorrect but the diversion is linked to the consequence. All three parts have detail. D: The concepts are explicit and applied well. There is no evidence of unpacking (e.g., future generations – sustainability. Links, flows, connected – interaction). 				