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Tick this box if you have NOT written in this booklet

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.

Excellence

TOTAL 08

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.

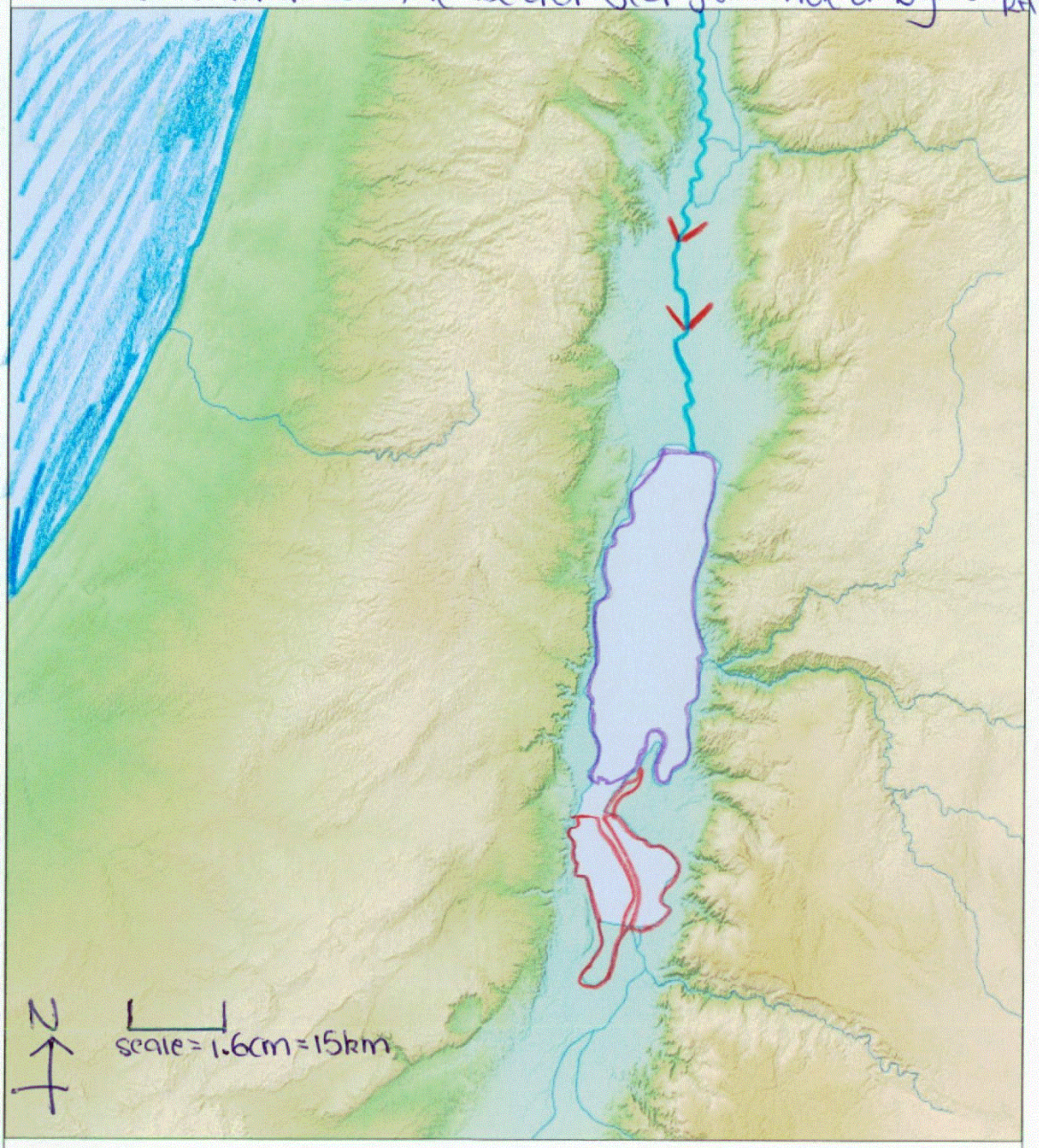
Give the map a suitable title, scale, north arrow, and complete the key.

(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 Jordan Rift Valley has the Dead Sea in the middle being 430msl. and in the middle ~~valley~~ hills surround all be sl. the sea with high mountains such as Amman being 1006m, and is very dry. the medditarran sea is to the west of the valley and in the middle of the valley the sea level is well below 0msl (some reach 400msl +)

Title: Précis map of the Dead Sea surronded by Jordan Rift Valley



Key:

Dead Sea 1931

= Jordan river & direction of flow

= the mediteranean sea

= area of Northern Basin (present)

= area so Southern Basin (present 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

Temperature

Experiences ~~record high~~ daily mean temperatures of ~~41~~ 26.1°c which is ~~16.1~~ 13.4°c ~~higher~~ daily higher than Wellington. Because of this, there is constantly high temperatures which dry's out the environment. So with little rain, it is evaporated.

Precipitation

Average, has 161 rainy days yearly which is 108 day less than Wellington. This means hardly receives rain for the dead sea to collect. means it will be vulnerable to droughts from lack of rain. means available water will be highly salty.

Sunshine

yearly, gets 3529hrs of rain which is 1462hrs more than wellington. Constant exposure to light, means less rain and more evaporation, from high exposure to sun.

High level of evaporation

Concentration of salt

(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.

there pattern of rainfall in the dead sea drainage ~~are~~ shows that the more north, then the more rainfall experienced compared to the south. For example, north by sea of Galilee experiences 600-800mm of rain compared to south of the dead sea experiences 100mm of rain. this means as the Jordan river is north, and flows south to the dead sea, it carries water for the sea which is an important supply of water because it recieves little rainfall by itself, due to location.

(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

The ~~climate~~ ~~position of the~~ natural environment, experiences that the dead seas it vulnreable to short supply of water at the Dead sea. this is because the natural enviroment, experiences very high tempeartures, with an average of 26.1°C daily, low precipation of 16days of rain yearly, and large sunshine exposure, experiency 3520hrs yearly. this means that the natural enviroment, has to withstand harsh conditions while having water. this will lead to high evaporation and concentration of salt in the Dead sea which is why over the years the sea is starting to further shrink.

(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.

In 1930, the dead sea level was -392mbelow sea level (mbsl), and had a steady decrease to 1980 reaching -401mbsl. This rate exponetially declined in level of the Dead sea dropping to -426mbsl in 2012. This means, within 32years, the level of the Dead sea declined by -25m. Therefore throughout the years, from 1980 there was a steady decrease, and then by 1980, became an exponetial, more rapid decrease in 2012.

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

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

  85% of water diverted from Jordan river to drinking water.

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

  Israel: 45%.

  Jordan: 39%.

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

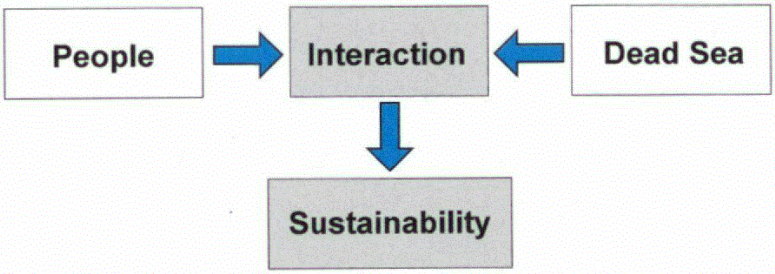
A consequence for the Dead Sea of water being diverted away from the Jordan river is that the Dead Sea constantly looses more than it gains. The jordan river provides 25mcm water, and however looses 1700mcm. 1700mcm is diverted taken from the Jordan river. This therefore means that 1675mcm that could be going into the dead sea is diverted. ~~this~~ A consequence of this is that because ~~it means take 285mcm.~~ the sea overall looses 985mcm, and only gains 310mcm, then the sea will continue to shrink. This is because more is extracted then what is given.

(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

Interaction = people & sea → tourism, irrigation, water → more towns, more resources e.g. water → more extracted.

People and the enviroment of the Dead sea, interact through a wide variaty of reasons, which negativly affects the sustainabilty of the Dead sea. In this case, there are many elements of the enviroment such as attraction for tourists, water supply which affect each other, therefore negativly affecting the sustainabilty of the Dead sea. For Israel, resource D shows that the Dead sea is a top tourist attraction, having over 2million international tourists and 650,000 local tourists yearly (before covid). therefore, because there are so many tourists arriving, more resources ~~wil~~ are needed to meet the high demands. ~~such as it~~ the dead sea can provide Isareal's 36% of drinking water (resource C), and as more tourists arrive resources are needed such as more drinking water, more water for irrigation (food), and agriculture. Because, ~~the~~ people and the Dead sea enviroment will interact by people bringing tourist attractions and the enviroment giving natural resources (e.g water). this interaction between people and the Dead sea enviroment affets sustainabilty of the Dead sea ~~it~~ as they are ~~not~~ preventing ~~beeraving meeti preventing~~ future generations from meeting their needs because they aren't acting in a way of adapting new ways without affecting the Dead sea. It is because

negative interaction between people and the enviroment, means that in future, the dead sea will be even more shrunk (shown on resource A, 2070 image), so therefore future generations won't be able to use it for a tourist attraction, or irrigation. people have tried to be more sustainable by coming up with solutions to pump the red sea water to the dead sea. However, this interaction won't be sustainable either as it means in future, the red sea may change "the chemisty of the Dead sea, and too much water would risk the growth of algae". therefore due to the interaction between people and the dead sea enviroment through, tourists, irrigation, agriculture, ~~the dead sea enviroment isn~~ this interaction isn't sustainable, therefore jepoardising the future dead sea and tourist attraction.

Acknowledgements
Material from the following source has been adapted for use in this assessment:

Page 3
https://commons.wikimedia.org/wiki/File:Dead_Sea_terrain_location_map.jpg. CC by SA 3.0.

Excellence Exemplar 2022

Subject	Level 2 Geography	Standard	91243	Total score	08

Q	Grade score	Annotation
1	E8	• A: Map is clearly drawn with accurate conventions. Mediterranean Sea could have been better. • 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 and unpacked. Linked to evaporation and has detail. • C: Graph analysis shows the major change, maths is correct, and the diversion is linked to the consequence. All three parts have detail. • D: The interaction of people and the Dead Sea is clearly linked to its sustainability. Both concepts are used explicitly and unpacked with detail.