L-Università ta' Malta

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE
EXAMINATIONS BOARD

ADVANCED MATRICULATION LEVEL
2026 SECOND SESSION

SUBJECT:	**Geography**
PAPER NUMBER:	I
DATE:	31st August 2026
TIME:	9:00 a.m. to 12:05 p.m.

Answer **FOUR** questions in total. Questions carry 25 marks each.

1. (a) Define the environmental lapse rate (ELR) and explain why it varies in **both** time and space. (5)

   (b) Explain the formation of the **THREE** types of rainfall, linking **each** to atmospheric stability and vertical air movement. (12)

   (c) Discuss how large-scale atmospheric circulation helps explain global circulation patterns of precipitation. (8)

   (Total: 25 marks)

2. Even though surface streams are rare on limestone rocks, karst landforms may still develop from the action of water.

   (a) Explain how karst develops in soluble rocks, focusing on how weathering, rock structure, and water influence the development of karst landforms. (15)

   (b) With reference to **ONE** example from the Maltese Islands, discuss how the development of karst landforms can evolve as an integrated system through time. (10)

   (Total: 25 marks)

3. Ecologists surveying a Maltese rocky shore always record distinct communities across the different littoral zones.

   (a) Describe the main physical conditions that differentiate the **THREE** littoral zones. (9)

   (b) Explain how the conditions mentioned in 3(a) shape the distribution of organisms and communities across the **THREE** littoral zones, with particular focus on adaptations and ecological interactions. (16)

   (Total: 25 marks)

Please turn the page.

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4. After an intense rainfall event, a river channel may experience a rise in river discharge followed by a slower return to baseflow.

   (a) Explain the main pathways of water movement through the drainage basin and the physical controls that influence this movement. (16)

   (b) Analyse how **THREE** changes in land cover and land management can shift water pathway processes and therefore impact the likelihood of flood events. (9)

(Total: 25 marks)

5. (a) Explain how climate influences soil-forming processes on Earth. (11)

   (b) Compare **TWO** contrasting climatic regions and discuss how climate helps explain their characteristic vegetation. (14)

(Total: 25 marks)

6. Hurricane Patricia was a late-season Category 5 hurricane that formed on October 20, 2015, as a tropical depression approximately 180 nautical miles south-southeast of Salina Cruz, Mexico, in the eastern North Pacific Ocean, and rapidly intensified over the following days to become the most intense tropical cyclone on record in the Western Hemisphere.

Figure 1: Tropical cyclone Patricia followed a north-northeast path, moving from the Pacific Ocean towards the Sierra Madre mountains before dissipating over central Mexico.
(Source: https://www.voanews.com)

   (a) Explain the origin and development of tropical cyclones, with particular attention to the environmental conditions needed for the development of this type of atmospheric system. (10)

   (b) Discuss how latitude and the Coriolis force influence the track and intensity of tropical cyclones. State **ONE** reason for the eventual weakening of tropical cyclones. (8)

   (c) Assess how climate variability and longer-term warming may influence tropical cyclone risk. (7)

(Total: 25 marks)

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ADVANCED MATRICULATION LEVEL
2026 SECOND SESSION

SUBJECT:	**Geography**
PAPER NUMBER:	II
DATE:	1st September 2026
TIME:	9:00 a.m. to 12:05 p.m.

Answer **FOUR** questions in total. Questions carry 25 marks each.

1. The shift from traditional town-centre shops to out-of-town retail complexes reflects a major transformation in urban planning and the structure of modern retailing.

   (a) Explain **THREE** factors that have contributed to the transformation mentioned in the above statement. (9)

   (b) Describe **TWO** advantages and **TWO** disadvantages related to the increase in out-of-town retail complexes. (8)

   (c) Discuss the new emerging trends of online retail. (8)

   (Total: 25 marks)

2. Plastic dominates ocean waste, amounting to tonnes of marine debris. Figure 1 and Figure 2 show two charts that provide more information about plastic waste in the oceans.

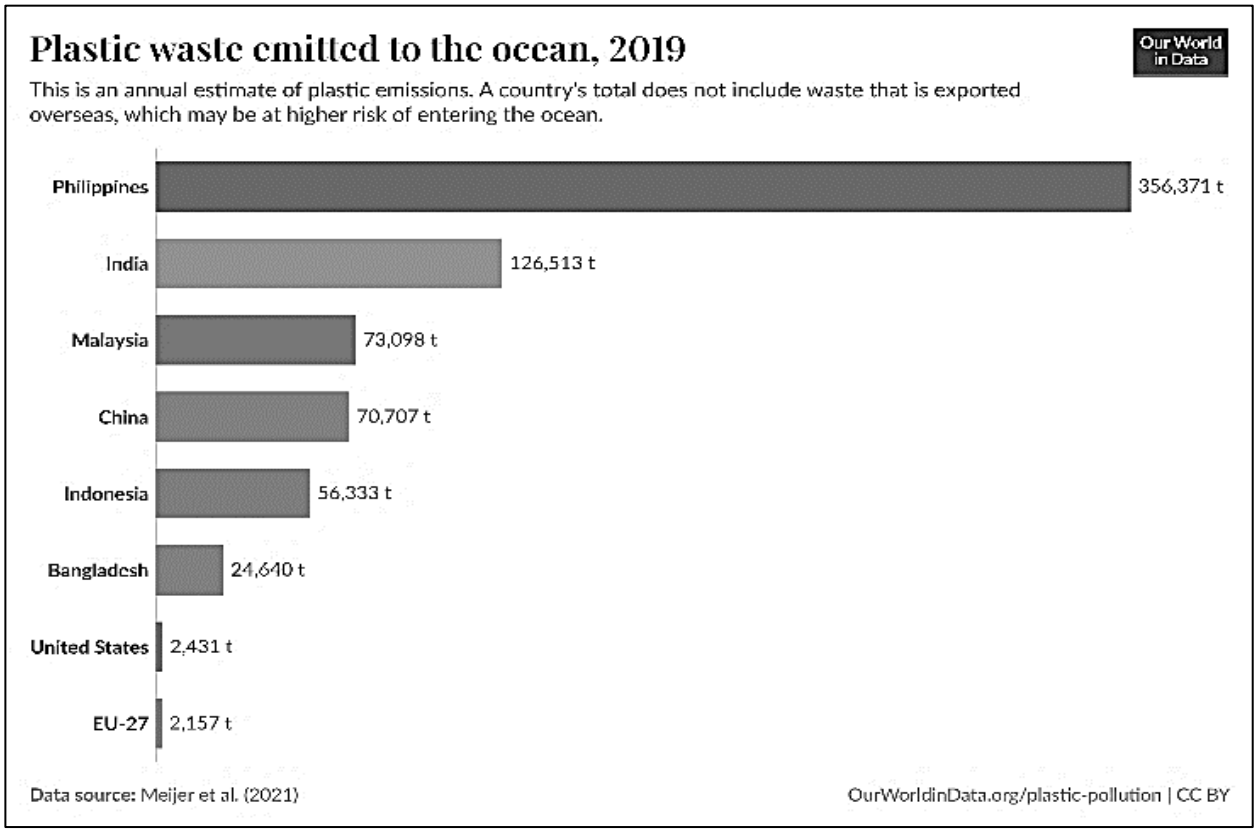

Figure 1. Data for plastic waste emitted to the ocean in 2019 measured in tonnes.
(Source: https://ourworldindata.org/plastic-pollution)

Question continues on the next page.

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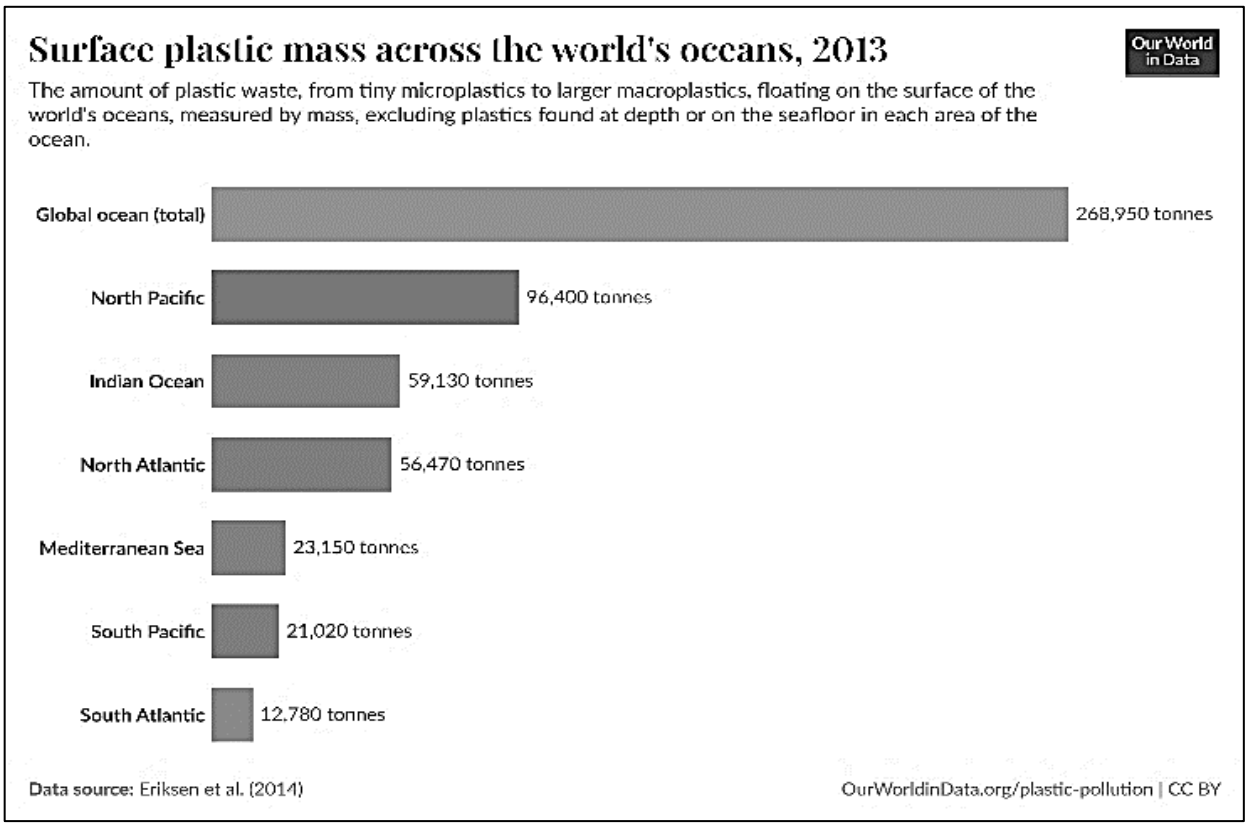

Figure 2. Data for surface plastic mass accumulated across the world's oceans in 2013 measured in tonnes.
(Source: https://ourworldindata.org/plastic-pollution)

(a) Explain the main findings of the graphs presented in Figure 1 and Figure 2. (10)

(b) Apart from plastic waste describe **TWO** types of waste disposal in the oceans and seas. (6)

(c) Explain how **THREE** environmental impacts of ocean waste disposal influence marine ecosystems. (9)

(Total: 25 marks)

3. "The world has a total forest area of 4.14 billion hectares, which is close to one-third of the global land area and equivalent to 0.50 hectare of forest per person."
(Source: FAO Global Food Resources Assessment Report, 2025)

(a) Outline the importance of forest resources. (5)

(b) With reference to a named case study, explain **TWO** environmental impacts related to the extraction of forest resources. (8)

(c) Discuss **THREE** ways how forest resources can be managed in a more sustainable manner. (12)

(Total: 25 marks)

4. (a) Explain how tourism development can lead to land-use conflicts and outline the consequences for local communities and the environment. (7)

   (b) Besides land-use conflicts, tourism generates a wide range of environmental, social, and economic impacts, shaping both the natural landscapes and human communities of destination areas in positive and negative ways.

   Describe **ONE** positive and **ONE** negative impact of tourism from **each** of the following three perspectives:
   (i) environmental; (6)
   (ii) social; and (6)
   (iii) economic. (6)

(Total: 25 marks)

5. Figure 3 is a world map showing the countries with a national primate city (darker shade).

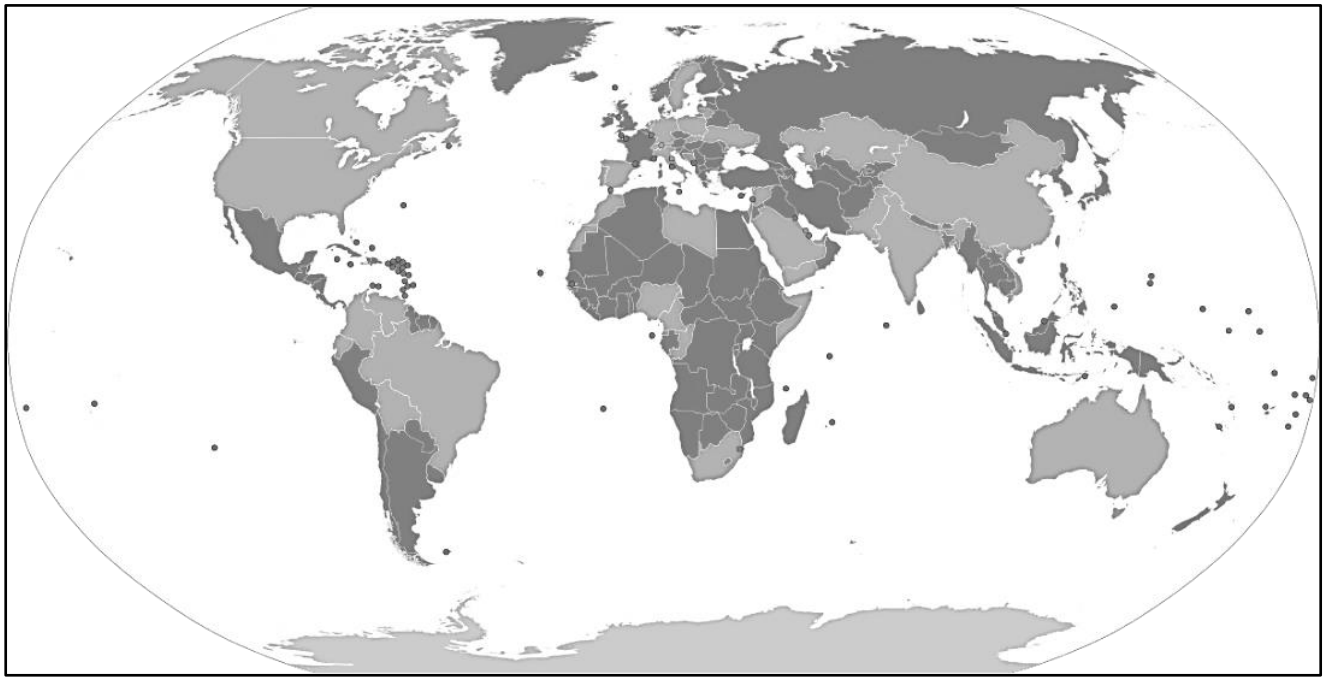

Figure 3. Countries with national primate city (darker shade).
(Source: https://en.wikipedia.org/wiki/Primate_city#)

   (a) Define the term primate city and describe the worldwide distribution of countries with primate cities from Figure 3. (7)

   (b) Explain **TWO** reasons why primate cities develop. (6)

   (c) With reference to **ONE** case study, discuss **THREE** problems that are likely to result from the development of a primate city. (12)

(Total: 25 marks)

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6. Table 1 shows the annual electricity generation and demand for the Maltese Islands from 2021 to 2024.

Table 1: Electricity generation and demand in the Maltese Islands from 2021 to 2024

Electricity Statistics Maltese Islands	**2021**	**2022**	**2023**	**2024**
Total electricity supplied from Power Plants (GWh)	1951.82	1996.51	2026.21	1849.87
Total electricity supplied from renewable production (GWH)	263.04	296.42	318.26	336.01
Total imported electricity from Malta-Sicily interconnector (GWh)	547.25	646.14	648.35	970.42
Annual average demand (MW)	438	473	470	473

(Adapted from https://nso.gov.mt/energy/)

(a) Interpret the main findings of Table 1. (8)

(b) Explain **THREE** negative impacts on the local environment related to power plant electricity generation in the Maltese Islands. (9)

(c) Discuss the role of wind and solar energy sources in the energy diversification strategy of the Maltese Islands. (8)

(Total: 25 marks)