



SUBJECT: **Geography**
PAPER NUMBER: Specimen Paper I
DATE:
TIME:

Answer **FOUR** questions in total. Questions carry equal marks.

- 1) The global mean sea level has fluctuated over the past millennia, and will continue to experience changes in the future.
- a) By making use of diagrams, explain how an ice age can lead to eustatic and isostatic changes in sea level. (8)
- b) Describe **TWO** coastal landforms that have been formed as a result of past changes in sea-level. (6)

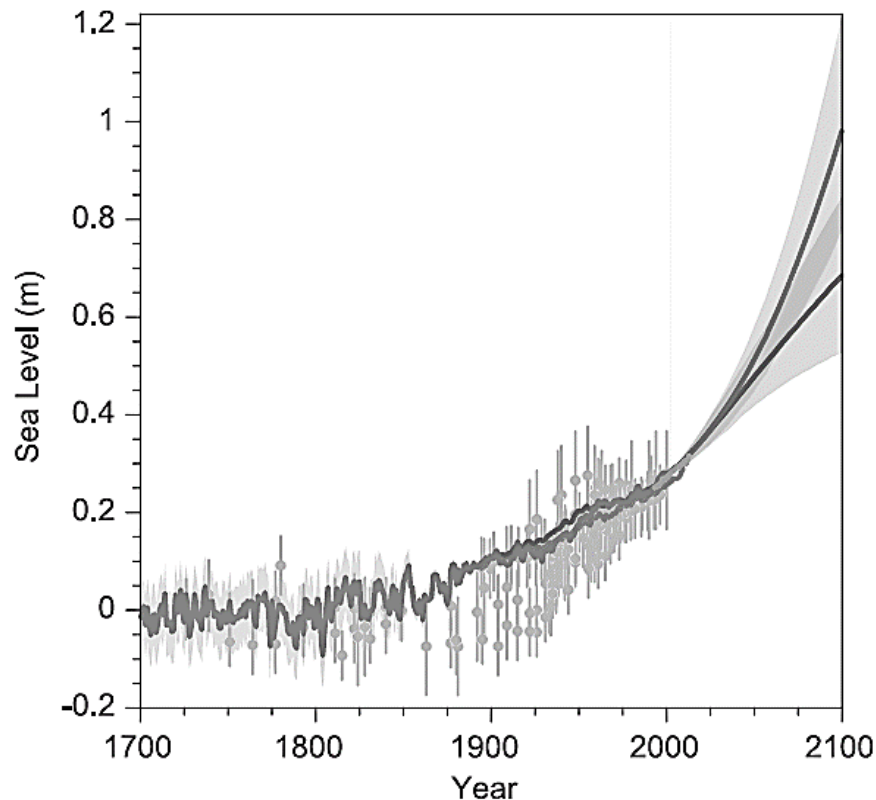


Figure 1: Compilation of paleo sea level data, tide gauge data, altimeter data, and central estimates and likely ranges for projections of global mean sea level rise, all relative to pre-industrial values.

Source: http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter13_FINAL.pdf

- c) Describe and account briefly for the future changes in sea level as projected in Figure 1. (7)
- d) Discuss two negative impacts of the changes shown in Figure 1, on the coastal areas of the Maltese Islands. (4)

- 2)
- a) Mention **ONE** major climatic zone. Explain how its main climatic characteristics are determined by its geographical position. (15)
 - b) Explain how these climatic conditions determine the soil formation processes and the vegetation characteristics. (10)
- 3)

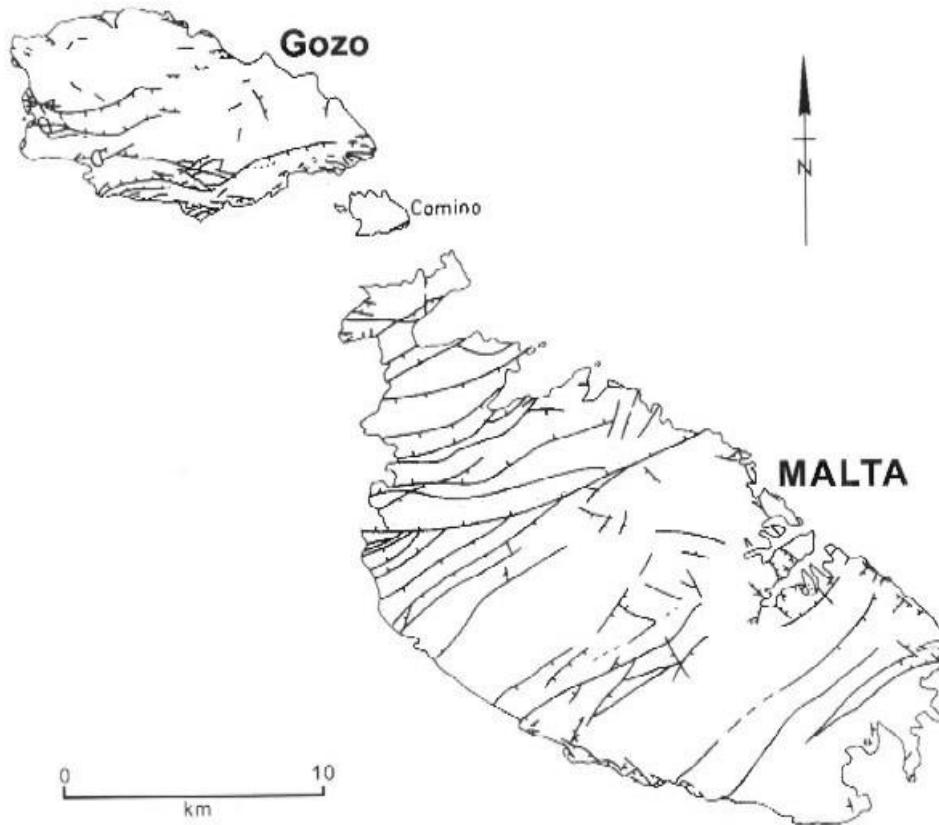


Figure 2: The Major Faults present in the Maltese Islands

https://www.geocaching.com/geocache/GC5W6FB_the-great-fault?guid=9fcbe3e3-bb66-4276-9973-7b52c264268e

- a) Define the term 'faulting'. Support your answer with a diagram showing a 'normal fault'. (3)
- b) By making reference to Figure 2 identify the **TWO** main types of faulting systems present in the Maltese Islands. (2)
- c) Describe the influence of faulting on the topography and landscape of Malta. Illustrate as appropriate. (14)
- d) By making use of diagrams, describe **TWO** map techniques that can be used to show the relief of the Maltese Islands. (6)

- 4) Explain how the management of water resources and land use may determine the risk of desertification. Explain with the use of case studies. (25)
- 5)
- a) Explain the process of an ecological succession. (5)
 - b) Describe and account for the major ecological communities of the Maltese Islands by making reference to particular locational examples. (20)
- 6) Due to the geographic and climatic conditions of the Maltese Islands, freshwater is a very scarce resource. It is reported that 70% of the country is facing water stress due to both water scarcity and deterioration. (Eurostat, 2014)
- a) Briefly describe the role of geology in the formation of aquifers in the Maltese Islands. Illustrate your answer with a diagram. (8)
 - b) Discuss how the following issues influence the quantity and quality of groundwater resources in the Maltese Islands:
 - i) Urbanisation;
 - ii) Global Warming;
 - iii) Nitrates. (9)
 - c) Outline **FOUR** water management and conservation strategies that can increase the quantity and quality of water available in the Maltese Islands. (8)



SUBJECT: **Geography**
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Answer **FOUR** questions in total. Questions carry equal marks.

1) Push and pull factors determine population density of different locations on earth. Figure 1 shows how population density varies in Brazil.



Figure 1: Population density in Brazil

<http://www.s-cool.co.uk/a-level/geography/population/revise-it/population-statistics-and-distribution>

- State the type of map illustrated in Figure 1 and explain how variation in population density is being illustrated on this map. (4)
- With reference to **TWO** physical and **TWO** human factors, describe population distribution in Brazil. (8)
- Mention **ONE** advantage and **ONE** disadvantage of using such a map to describe population density. (4)
- Since the 1960s Malta's harbour region lost many of its inhabitants through internal migration. Discuss this statement with reference to the different factors that lead to such migration pattern. (9)

- 2)
- a) Define the term urban sprawl. (2)
 - b) Can the Maltese Islands be described as 'over populated' or 'densely populated'? Explain with the use of examples. (8)
 - c) Many urban areas in the Maltese Islands are going through regeneration. Explain the role of local authorities and NGOs where new development is concerned. (6)
 - d) Urban regeneration should take into consideration local plans and urban conservation areas. Briefly explain the role of urban conservation areas. (4)
 - e) Sustainable transport methods are imperative when planning urban regeneration. Briefly describe ways in which urban areas attempt to alleviate traffic congestion. (5)
- 3) The creation of innovative farming niches together with assistance to farmers and breeders to become more competitive through diversification should be the central targets to overcome any economic constraints posed to the Maltese agricultural industry. (National Agricultural Policy for the Maltese Islands 2016 – 2025)
- a) In relation to the above statement, discuss the most prominent economic, social and environmental pressures faced by Maltese farmers. (12)
 - b) The Common Agricultural Policy (CAP) is needed to ensure sustainable farming practices and rural development. Describe the economic and environmental policies that help to support the agricultural system within the EU. (8)
 - c) Briefly explain how indigenous agriculture can help to limit the effects modern agricultural practices have on the environment. (5)
- 4) The locational factors affecting manufacturing industries changed throughout the years. Factors favouring the location of industries during the Industrial Revolution may no longer apply today.
- a) Describe **TWO** factors that conditioned the location of manufacturing industries in the 19th century during the Industrial Revolution and **TWO** factors that condition the location of manufacturing industry nowadays. (8)
 - b) Define the concept of multi-national corporations. (4)
 - c) Evaluate the factors which have enhanced the development of multinational corporations in the world. (5)
 - d) Describe **TWO** advantages and **TWO** disadvantages of multinational corporations experienced by the host country. (8)

- 5)
- a) Define the term 'renewable energy'. (2)
 - b) A challenge lies in increasing the share of renewable energy on a global scale (Goal 7 in the UN Sustainable Development Goals). Explain the environmental, economic and social advantages and disadvantages in using renewable energy like solar, hydroelectric and wind energy. (11)
 - c) The table below shows data for GNP (US dollars) and percentage of energy generated from renewable sources (%). Using the formula for the spearman rank correlation coefficient, calculate the spearman rank correlation between GNP and percentage of energy generated from renewable sources. (8)

Country	GNP (US dollars)	Percentage of energy generated from renewable sources
Norway	82,330	57
China	68,030	17
Sweden	54,630	50
Netherlands	46,310	6
United Kingdom	42,390	15
France	38,950	13
Spain	27,520	17
Slovenia	21,660	23
Portugal	19,850	30
Czech Republic	17,570	13

$$R_s = 1 - \frac{(6 \sum d^2)}{(n^3 - n)}$$

- d) Use the significance graph to read the number of degrees of freedom against the spearman rank correlation coefficient and state whether a relationship exists between GNP (US dollars) and percentage of energy generated from renewable sources (%). (4)
- 6) Mineral extraction is an important economic activity with a multitude of environmental concerns.
- a) Account for the worst environmental issues attributed to mineral extraction. (10)
 - b) Describe the main causes and consequences of acid rain. (8)
 - c) With the use of examples, explain how environmental management can be used to reduce global environmental issues. (7)