

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD
UNIVERSITY OF MALTA, MSIDA
MATRICULATION EXAMINATION
INTERMEDIATE LEVEL
SEPTEMBER 2013

SUBJECT:	GEOGRAPHY
DATE:	6 th September 2013
TIME:	4:00 p.m. to 7.00 p.m.

Directions to Candidates

Answer a total of FIVE questions: one question from each of the four Sections and a fifth question from any Section.
The use of non-programmable calculators is permitted.
All questions carry equal marks.

Section 1: Physical Geographical Processes

1. Figure 1 shows the surface geology of the Maltese Islands.

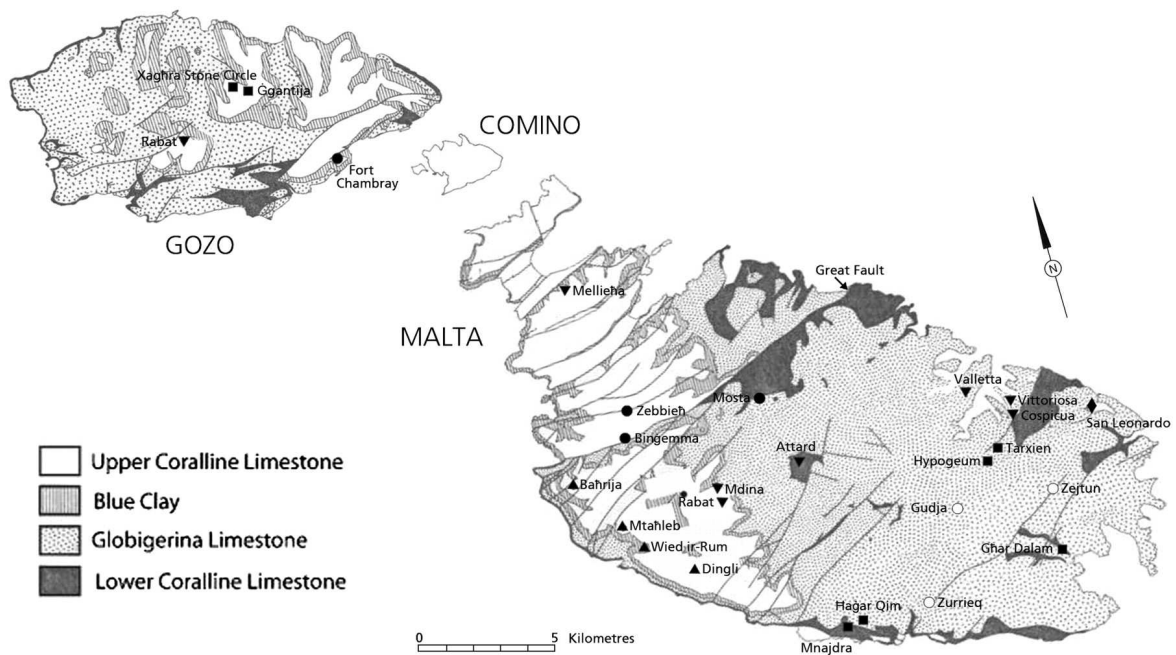


Figure 1: Surface geology of the Maltese Islands
 (<http://sp.lyellcollection.org>)

- (a) Describe the geographic distribution of the rock types shown in Figure 1 on the surface of the Maltese Islands. (8 marks)
- (b) Briefly describe the main characteristics of Blue Clay and account for its presence in the form of narrow bands around the Upper Coralline Limestone areas in the north-western region of the Maltese Islands as shown in Figure 1. Include a labelled diagram or diagrams to illustrate your answer. (12 marks)

2. Figure 2 shows the plates on the Earth's surface. Figure 3 shows the areas in the world that are most prone to seismic activity.
- Draw a labelled diagram to show the internal structure of the earth. (4 marks)
 - What are convection currents and what is their role in the occurrence of earthquake activity? (6 marks)
 - With the help of Figure 2 and Figure 3, describe the distribution of areas prone to earthquakes and volcanic activity, and briefly explain the tectonic margins in those areas. Refer to specific examples. (10 marks)



Figure 2: Plates on the world's surface
(Source: <http://earthobservatory.nasa.gov>)

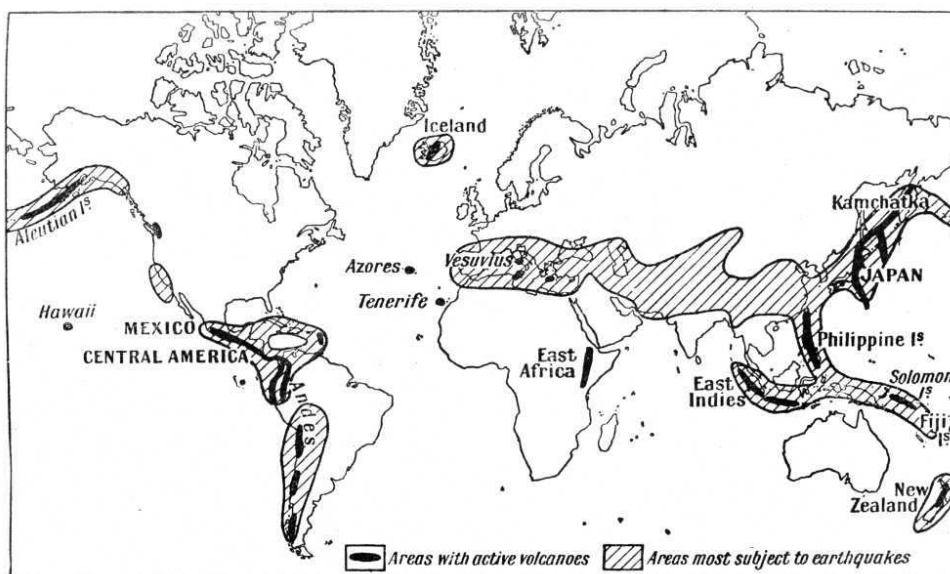


Figure 3: World areas prone to seismic and volcanic activity.
(Source: <http://www.probertencyclopaedia.com>)

- 3. (a) With the help of diagrams describe the main characteristics of air circulation in a depression and in an anticyclone. (10 marks)
- (b) Account for the arid conditions that prevail over the Mediterranean region during the summer months. (10 marks)

Section 2: Human Geographical Processes

- 4. People migrate from one country to another for various reasons.
 - (a) By referring to specific examples, give **four** reasons why people migrate from one country to another. (10 marks)
 - (b) Discuss **two** obstacles encountered when people migrate. (6 marks)
 - (c) Identify **two** problems that migrants face when they arrive in their country of destination. (4 marks)

- 5. (a) Define the term settlement hierarchy and sketch an example. (4 marks)
- (b) Explain how the population and function of settlements differ across the hierarchy. (10 marks)
- (c) With the help of Figure 4, give **three** reasons why many of the world's largest cities are located on the coast. (6 marks)

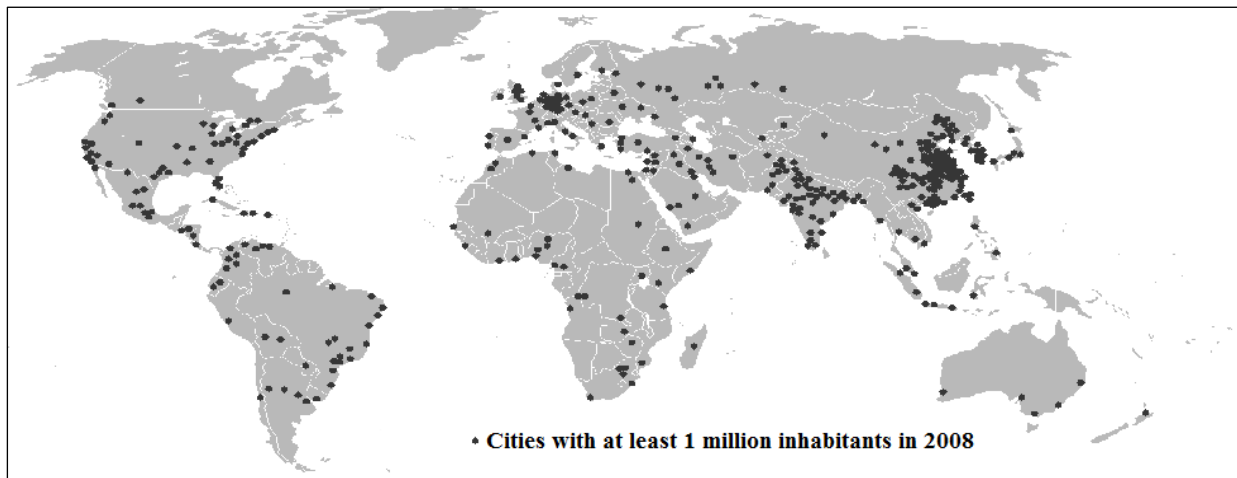


Figure 4. Location of large cities in the world
(Source: <http://www.skyscrapercity.com>)

6. Table 1 shows the percentage distribution of employment by sector in Malta in 2011.

Sector	Percentage
Agriculture	1.5%
Industry	24.7%
Services	73.8%

Table 1. Employment by sector in Malta in 2011.
(Source: www.nso.gov.mt)

- (a) Give **three** reasons why employment in agriculture is so low. (6 marks)
- (b) Figure 5 shows the distribution of industrial estates in Malta. Account for the concentration of industrial estates close to the harbour region. (6 marks)
- (c) Discuss **four** reasons why most manufacturing industries locate in industrial estates. (8 marks)



Figure 5. Location of industrial estates in Malta.
(Source: <http://www.maltaenterprise.com>)

Section 3: The Man-Environment Relationship

7. Figure 6 shows the location of hardstone and softstone quarries in Malta.

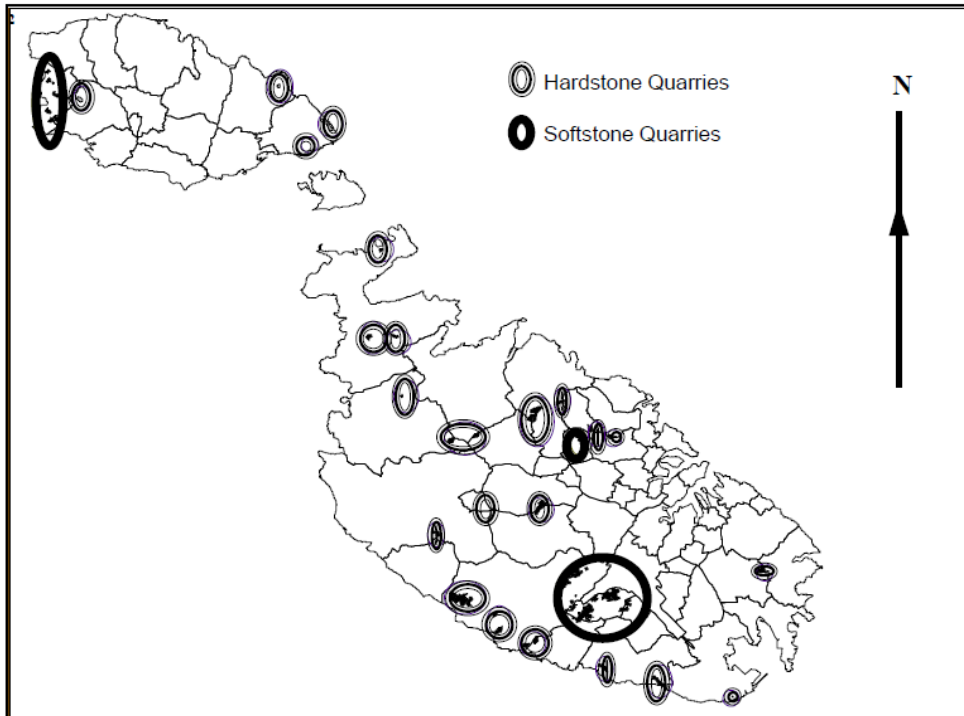


Figure 6: Location of hardstone and softstone quarries in Malta.
 (Source: <http://www.mepa.org.mt/soer2002>).

- (a) Explain the impact of quarrying on the ground water supply in Malta. (10 marks)
 - (b) Give **two** examples of how quarries could be rehabilitated. Refer to specific examples. (10 marks)
8. (a) Explain **four** causes of soil erosion. (8 marks)
- (b) Give examples from around the world where soil erosion is a problem and describe the causes that are accelerating the rate of such loss. (8 marks)
- (c) Describe **two** measures that can be implemented to reduce soil loss. (4 marks)

Please turn the page.

9. Figure 7 shows the increase in atmospheric CO₂ observed in Hawaii between 1960 and 2010.

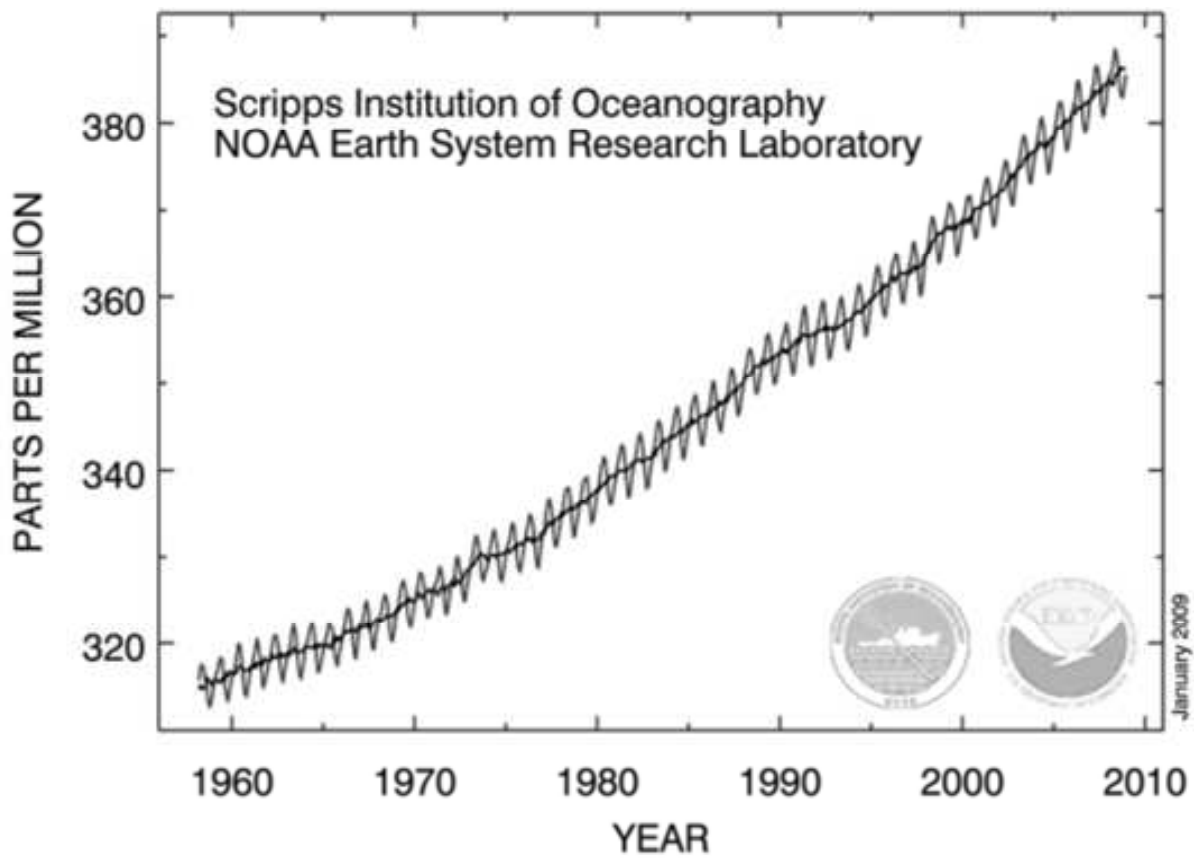


Figure 7: Atmospheric CO₂ recorded in Hawaii.
(Source: <http://www.esrl.noaa.gov>)

- (a) Describe in detail how increased carbon dioxide (CO₂) in the atmosphere causes global warming. (8 marks)
- (b) Explain and discuss **three** possible consequences of climate change. (12 marks)

Section 4: Fieldwork and Mapwork Skills

10. (a) Name **four** variables shown in the graph in Figure 8. (4 marks)
 (b) Describe the relationship shown in the graph between:
 (i) per capita total energy consumption and climate type, and
 (ii) per capita total energy consumption and standard of living. (10 marks)
 (c) Discuss **one** strength of this graph. (2 marks)
 (d) Suggest how the presentation of this data could be improved. (4 marks)

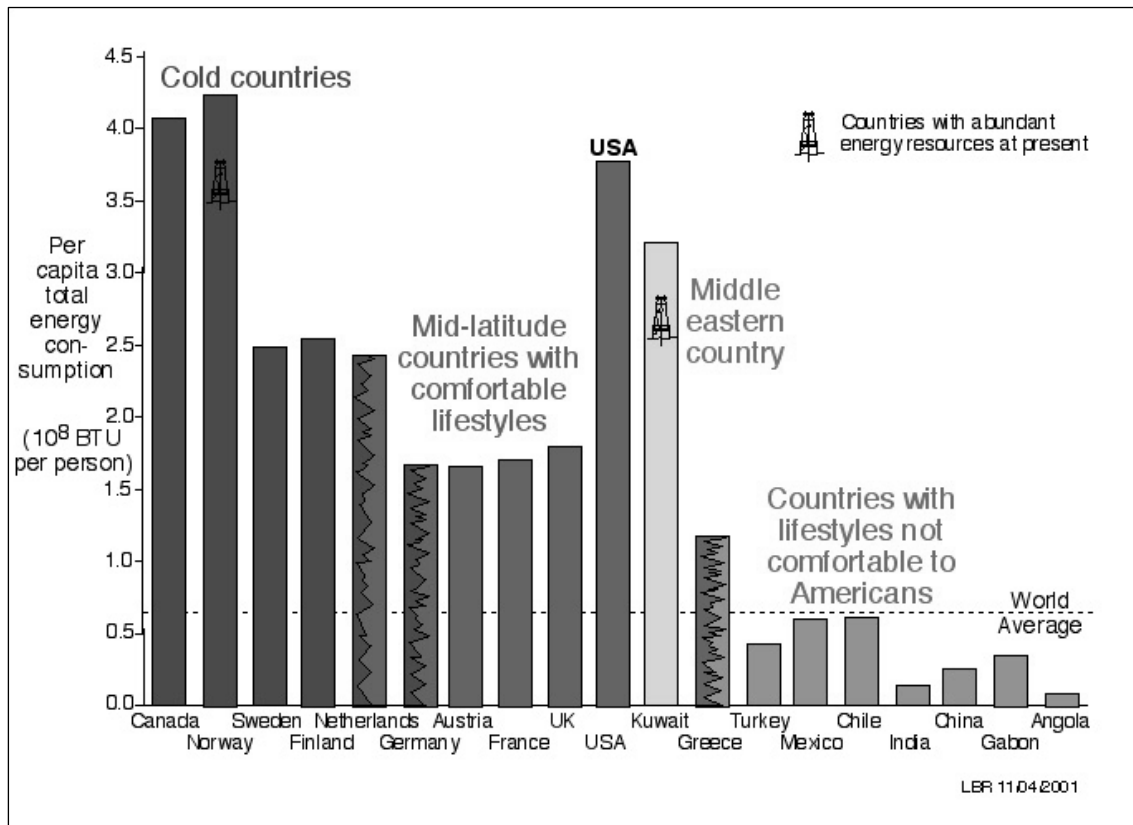


Figure 8: Per capita total energy consumption in various countries.
 (Source: <http://www.gly.uga.edu>)

11. (a) Explain the difference between systematic sampling and random sampling. (6 marks)
 (b) Describe an investigation which would require the use of the systematic sampling technique. (6 marks)
 (c) Support the choice of the investigation described in part (b). (4 marks)
 (d) Explain the drawbacks of using the systematic sampling technique for the investigation described in part (b). (4 marks)

Please turn the page.

12. (a) Explain the importance of urban land use models in geography. (6 marks)
 (b) Explain **three** limitations of urban land use models. (8 marks)
 (c) The top part of Figure 9 shows the land use model developed by Harris and Ullman in 1945, and the bottom part of the figure shows a pictorial representation of Harris and Ullman’s model. Briefly explain how a pictorial representation may help the reader understand better Harris and Ullman’s original model. (6 marks)

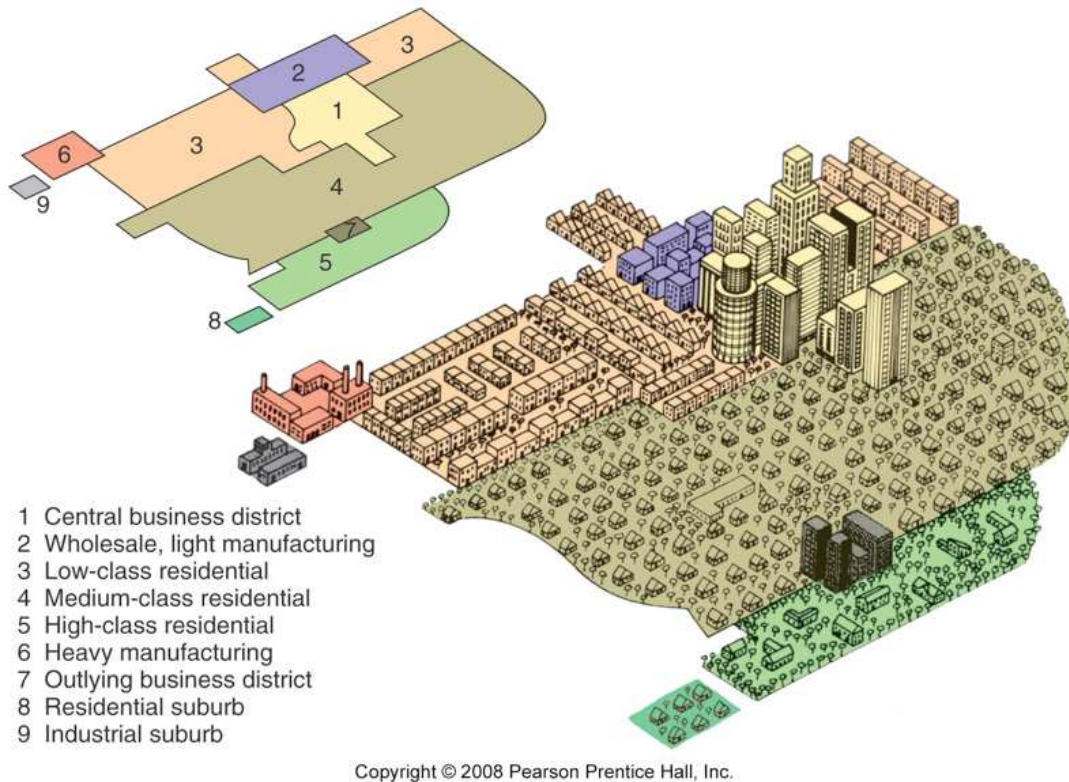


Figure 9: Harris and Ullman land use model in schematic (top) and pictorial (bottom) forms.