

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD  
UNIVERSITY OF MALTA, MSIDA  
MATRICULATION EXAMINATION  
INTERMEDIATE LEVEL  
SEPTEMBER 2016

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**SUBJECT:** GEOGRAPHY  
**DATE:** 31st August 2016  
**TIME:** 4:00 p.m. to 7:05 p.m.

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**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.

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**Section 1: Physical Geographical Processes**

1. Graphs A and B are two climate graphs of two places in different climatic zones.
  - (a) Which of the graphs is typical of a place with a Mediterranean climate? (2 marks)
  - (b) Give **two** reasons for choosing the graph in (a). (6 marks)
  - (c) Poleward expansion of the subtropical anticyclone causes the seasonal variation in rainfall characteristic of the Mediterranean climate. Explain this statement. (12 marks)

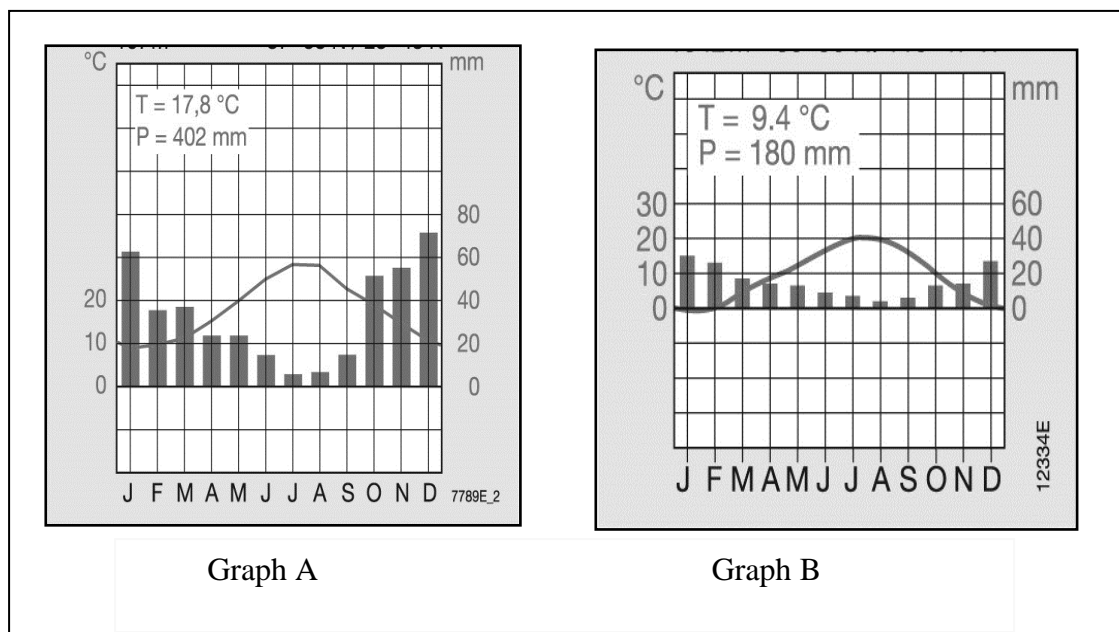


Figure 1: Climate graphs  
(Source: <http://www.diercke.com>)

2. (a) Define the term 'longshore drift'. (4 marks)
- (b) With the help of a labelled diagram, explain the process of longshore drift. (10 marks)
- (c) Longshore drift can cause beach erosion. Explain this statement. (6 marks)

3. (a) Describe the main characteristics of Blue Clay. (6 marks)
- (b) Explain why the Blue Clay layer is important for the supply of freshwater in the Maltese Islands. (6 marks)
- (c) With the help of diagrams, describe the formation of Blue Clay slopes as shown in figure 2. (8 marks)



Figure 2: Blue Clay slopes  
(Source: Gilson, E.)

**Section 2: Human Geographical Processes**

4. (a) Figure 3 shows the infant mortality rate across the world for 2015. Define the term ‘infant mortality rate’. (3 marks)
- (b) Suggest why data for some countries may not be available. (3 marks)
- (c) Describe the distribution of countries according to their infant mortality rate as shown by the map in figure 3. (4 marks)
- (d) With reference to specific countries, outline **four** causes that may bring about a high infant mortality rate. (10 marks)



Figure 3: Infant mortality rate across the world for 2015  
(Source: [www.childmortality.org](http://www.childmortality.org))

5. Quarrying is one of the primary industries in the Maltese Islands.
- Name the **two** types of rocks extracted from quarries in the Maltese Islands. (2 marks)
  - Name **one** area where any one of the rocks mentioned in (a) is quarried in the Maltese Islands. (3 marks)
  - Describe **two** factors which have encouraged this activity in the area mentioned in (b). (6 marks)
  - Explain **three** problems being faced by the quarrying industry in the Maltese Islands. (9 marks)
6. The map in figure 4 shows the population density across the Maltese Islands.
- Briefly describe the population distribution over the Maltese Islands. (4 marks)
  - Which region is most densely populated? (1 marks)
  - Give **two** reasons for the high concentration of population in the region named in (b). (6 marks)
  - Discuss **three** major problems that the high population density has created in the region named in (b). (9 marks)

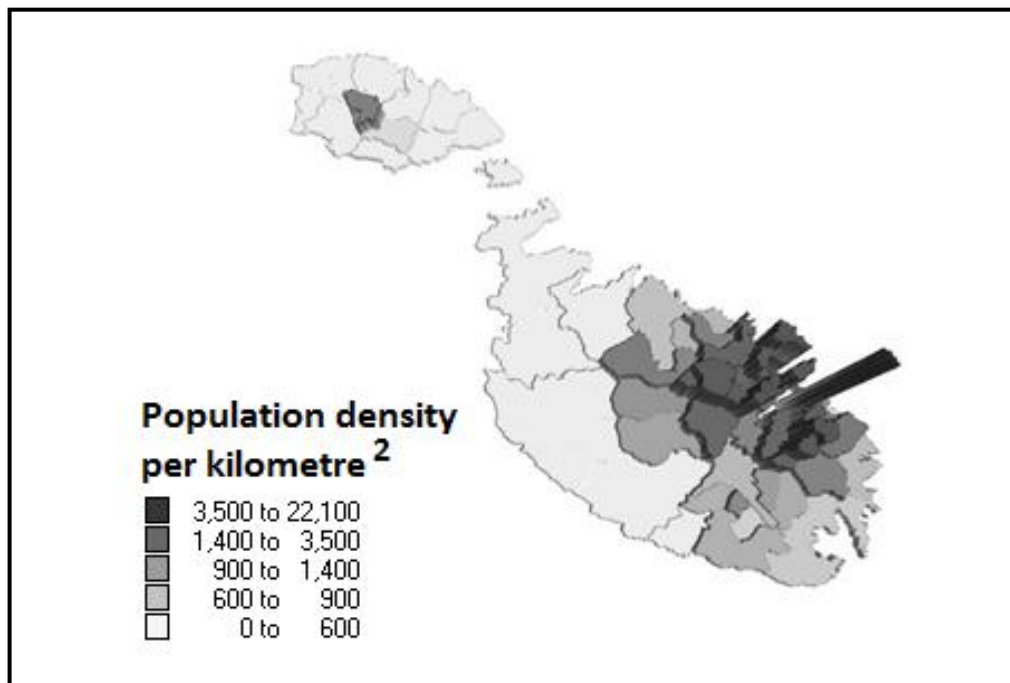


Figure 4: Population density across the Maltese Islands  
(Source: <http://www.mepa.org.mt>)

### Section 3: The Man-Environment Relationship

7. Heavy rainfall in December 2015 caused severe flooding in northern England. Homes were evacuated in Lancashire and Yorkshire and rivers were overflowing in Manchester and Leeds.
- Explain why people, properties and infrastructure are adversely affected when flooding due to heavy rainfall occurs. (10 marks)
  - Discuss what remedial actions can be taken to forecast and better manage floods caused by heavy rainfall. (10 marks)

8. Figure 5 shows carbon dioxide (CO<sub>2</sub>) emissions in the world for the years 1751 to 2010.
  - (a) Mention **two** natural and **two** human-related circumstances which lead to CO<sub>2</sub> production. (4 marks)
  - (b) Discuss the principal factors which have led to a dramatic increase in CO<sub>2</sub> levels during the past 65 years. (10 marks)
  - (c) Briefly describe **three** measures that can be undertaken in order to reduce atmospheric CO<sub>2</sub> emissions. (6 marks)

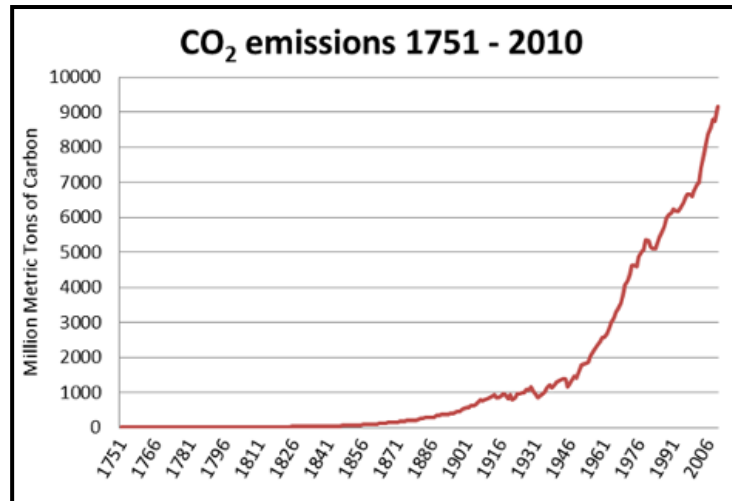


Figure 5: Global carbon dioxide emissions for the years 1751 to 2010  
 (Source: <http://www.globalissues.org>)

9. Figure 6 shows the categories of different types of domestic water use in Malta. Analyse this data and answer the following questions.

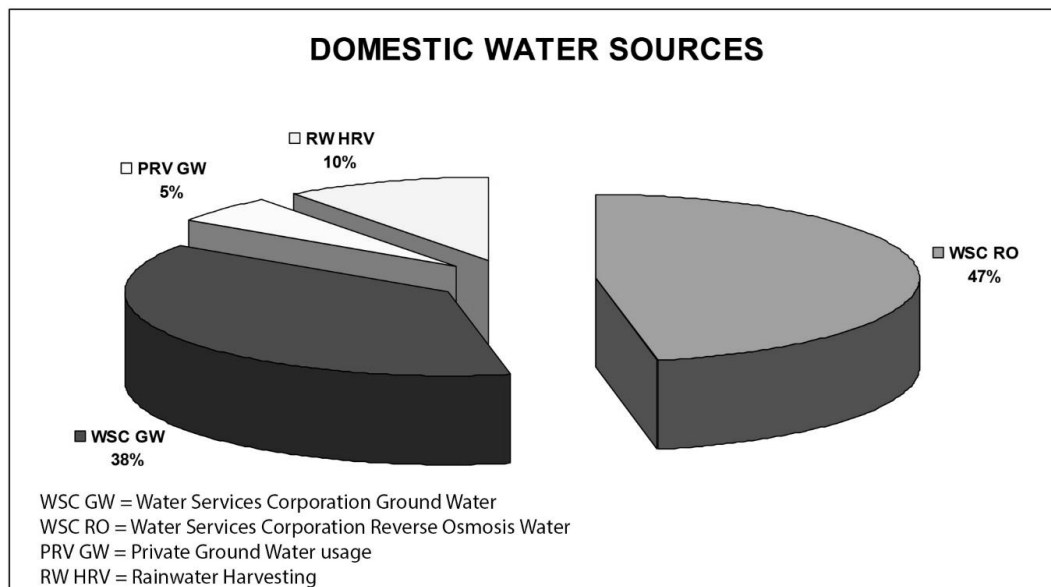


Figure 6: The categories of different types of domestic water use in Malta.  
 (Source: <http://mra.org.mt>)

- (a) Explain the term ‘rainwater harvesting’. How can rainwater be harvested at a domestic/household level? (6 marks)
- (b) Briefly explain the process of Reverse Osmosis water production. (4 marks)
- (c) Give a detailed account of why, in recent years, the Reverse Osmosis domestic water supply has exceeded that obtained from Ground Water sources. (10 marks)

**Section 4: Fieldwork and Mapwork Skills**

- 10. In his theory of industrial location, Alfred Weber made use of models to explain his principles.
  - (a) Why are models used in geography? (2 marks)
  - (b) Briefly outline Alfred Weber’s theory of industrial location. (6 marks)
  - (c) Discuss **two** assumptions made by Weber in his theory of industrial location. (6 marks)
  - (d) Discuss **two** criticisms of Weber’s theory of industrial location. (6 marks)
  
- 11. (a) Give an in-depth description of a geographical field investigation of your choice in which the inclusion of a questionnaire would be an asset. (6 marks)
- (b) Design a questionnaire containing a total of **eight** questions for the chosen fieldwork topic you indicated in question (a) above. This must contain a mixture of both closed- and open-ended questions. (8 marks)
- (c) How do you intend to undertake the administration of this questionnaire? Give reasons to justify the specified course of action. (6 marks)
  
- 12. During a conference, some university students conducted a survey amongst the participants to see what nationalities were present. Table A shows their findings:

Table A

Nationality	Frequency
Maltese	140
English	65
German	50
French	10
Italian	5

- (a) How does a pie chart represent data? (4 marks)
- (b) Draw a pie chart to represent the data in Table A. Show all your workings. (8 marks)
- (c) Discuss **two** advantages and **two** disadvantages of using a pie chart to represent your data. (8 marks)