

**MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD
UNIVERSITY OF MALTA, MSIDA**

**MATRICULATION EXAMINATION
INTERMEDIATE LEVEL
MAY 2017**

SUBJECT:	GEOGRAPHY
DATE:	23 rd May 2017
TIME:	9:00 a.m. to 12:05 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. “Approximately 50% of incoming solar radiation is absorbed by the Earth’s surface.”
(Source: www.earthobservatory.nasa.gov)
 - (a) Account for the remaining 50% of the incoming solar radiation. (8)
 - (b) What would happen if:
 - (i) the Earth’s system retains more solar energy than it radiates back to space?
 - (ii) the Earth’s system radiates more energy to space than it receives from the sun? (4)
 - (c) Global insolation varies considerably over time and space. Discuss **TWO** factors that influence insolation on a global scale. (8)

(Total: 20 marks)

2.
 - (a) Define briefly the term ‘continental drift’. (3)
 - (b) Describe **THREE** pieces of evidence that support the theory of continental drift. (6)
 - (c) Explain what causes tectonic plates to move. (3)
 - (d) Name **ONE** type of plate boundary found in the Mediterranean region. (2)
 - (e) Describe and explain **THREE** main characteristics of the plate boundary mentioned in (d). Include a labelled diagram with your answer. (6)

(Total: 20 marks)

Please turn the page.

3. Examine figure 1 which shows the main factors influencing drainage basins and answer the questions below:

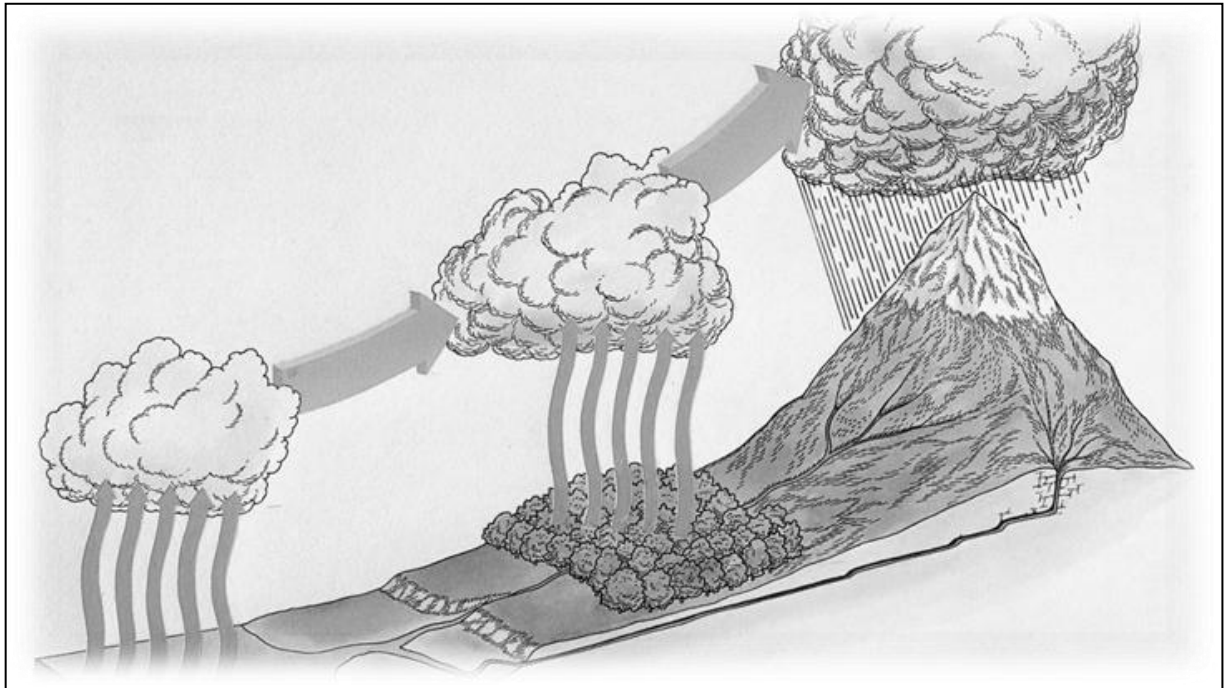


Figure 1: Factors influencing drainage basins.

(Source: <https://www.reference.com>)

- (a) Use Figure 1 to explain **THREE** main processes of the hydrological cycle. (6)
- (b) Describe **THREE** ways in which rain water moves through the hydrological cycle. (9)
- (c) Explain the role of plants and trees in this cycle. (5)

(Total: 20 marks)

SECTION 2: HUMAN GEOGRAPHICAL PROCESSES

4. (a) Define ‘site’ and ‘situation’ of a settlement. (4)
- (b) List and define **FOUR** factors influencing the site of a settlement. (8)
- (c) Discuss the factors that influenced the site of **ONE** named urban settlement and **ONE** named rural settlement in any country of your choice. (8)

(Total: 20 marks)

5. (a) Define ‘secondary industry’. (2)
- (b) List **TWO** locations where there are industrial estates in Malta. (2)
- (c) Explain why industrial activities are agglomerated in industrial estates in Malta. (8)
- (d) State **TWO** reasons and briefly explain why it is important for secondary industry to prosper in Malta. (8)

(Total: 20 marks)

6. Figure 2 illustrates population changes in some cities in the Mediterranean region, with projections up to the year 2030.

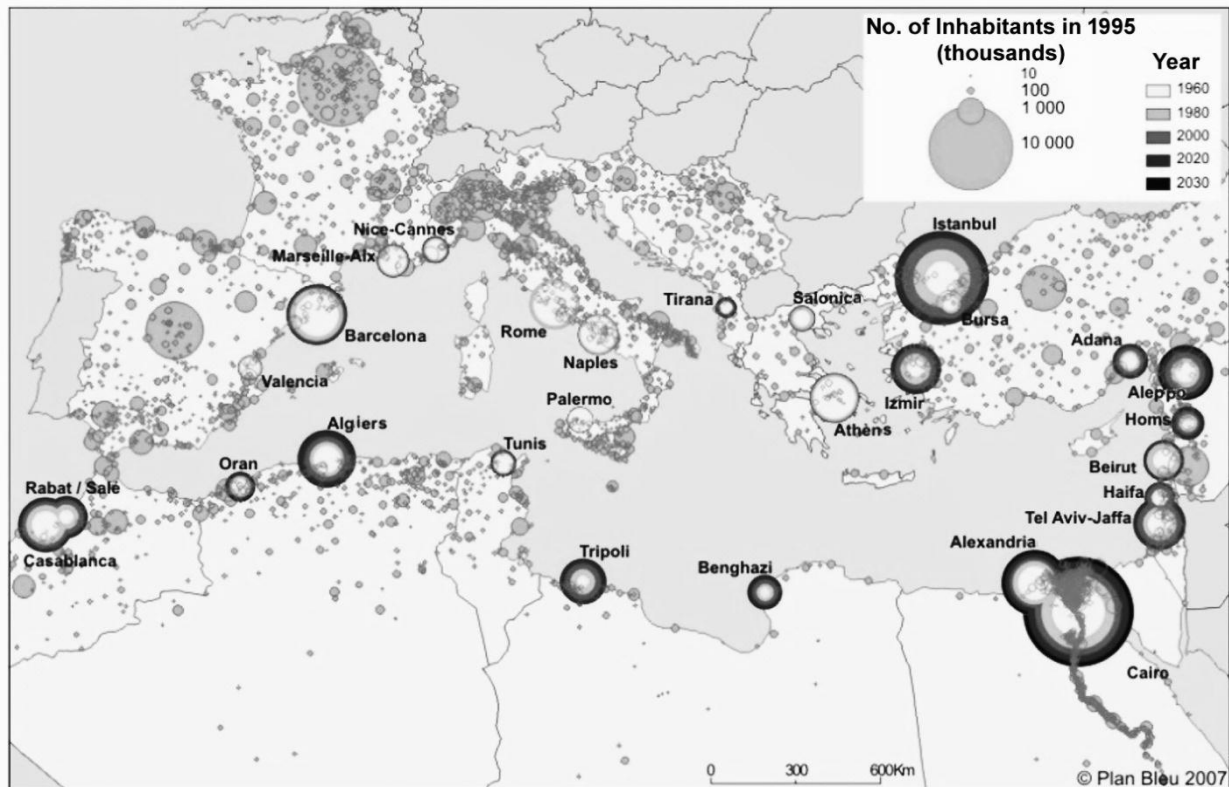


Figure 2: Population changes in some cities in the Mediterranean countries – Projections to 2030.
 (Source: Blue Plan from Geopolis 1998 and United Nations Population Division, World Urbanization Prospects; the 2005 Revision)

- (a) Compare and contrast the major changes in population growth between the northern and southern regions of the Mediterranean as shown in Figure 2. (8)
- (b) Discuss **TWO** factors that are influencing population changes in:
 - (i) the northern Mediterranean region; (8)
 - (ii) the southern Mediterranean region. (8)
- (c) Identify, and briefly discuss **TWO** changes currently being experienced in the population structure of the Maltese Islands. (4)

(Total: 20 marks)

SECTION 3: THE MAN-ENVIRONMENT RELATIONSHIP

7. In the Maltese archipelago, hard-stone and soft-stone quarries are a principal driving force of the construction industry.
- (a) Explain the difference between hard-stone and soft-stone quarries. (4)
 - (b) Describe **FIVE** ways through which quarry sites can negatively impact their surrounding environment. (10)
 - (c) Describe **TWO** ways by which a disused quarry site can be reutilised. (6)

(Total: 20 marks)

8. “Climate change will affect all four dimensions of food security: food availability, food accessibility, food utilization and food systems stability. It will have an impact on human health, livelihood assets, food production and distribution channels, as well as changing purchasing power and market flows.”
(Source: *Climate Change and Food Security: A framework document.*)
- (a) Define the term ‘climate change’ and briefly explain **TWO** human-induced processes by which it is caused. (8)
- (b) Discuss **THREE** ways by which climate change can affect food availability and accessibility. (6)
- (c) Discuss **THREE** measures which can be undertaken in order to mitigate climate change. (6)
- (Total: 20 marks)**
9. World media periodically features the devastation caused by volcanic events.
- (a) Give **TWO** reasons why communities inhabit volcanic areas. (4)
- (b) Describe **FOUR** ways by which people, property and infrastructure may be adversely affected by volcanic activity. (8)
- (c) Discuss **TWO** actions that can be undertaken in order to forecast and manage volcanic-related activity and devastation. (8)
- (Total: 20 marks)**

SECTION 4: FIELDWORK AND MAPWORK SKILLS

10. (a) Give **FIVE** reasons to justify why fieldwork is a key element of any geographical-based enquiry. (10)
- (b) Explain the difference between a geographical-based questionnaire and a survey. (6)
- (c) Identify and briefly describe a fieldwork activity in which each of the data collection methods described in (b) above, can be employed. (4)
- (Total: 20 marks)**

11. Figure 3 is a topographic map of a location in the West of Malta.

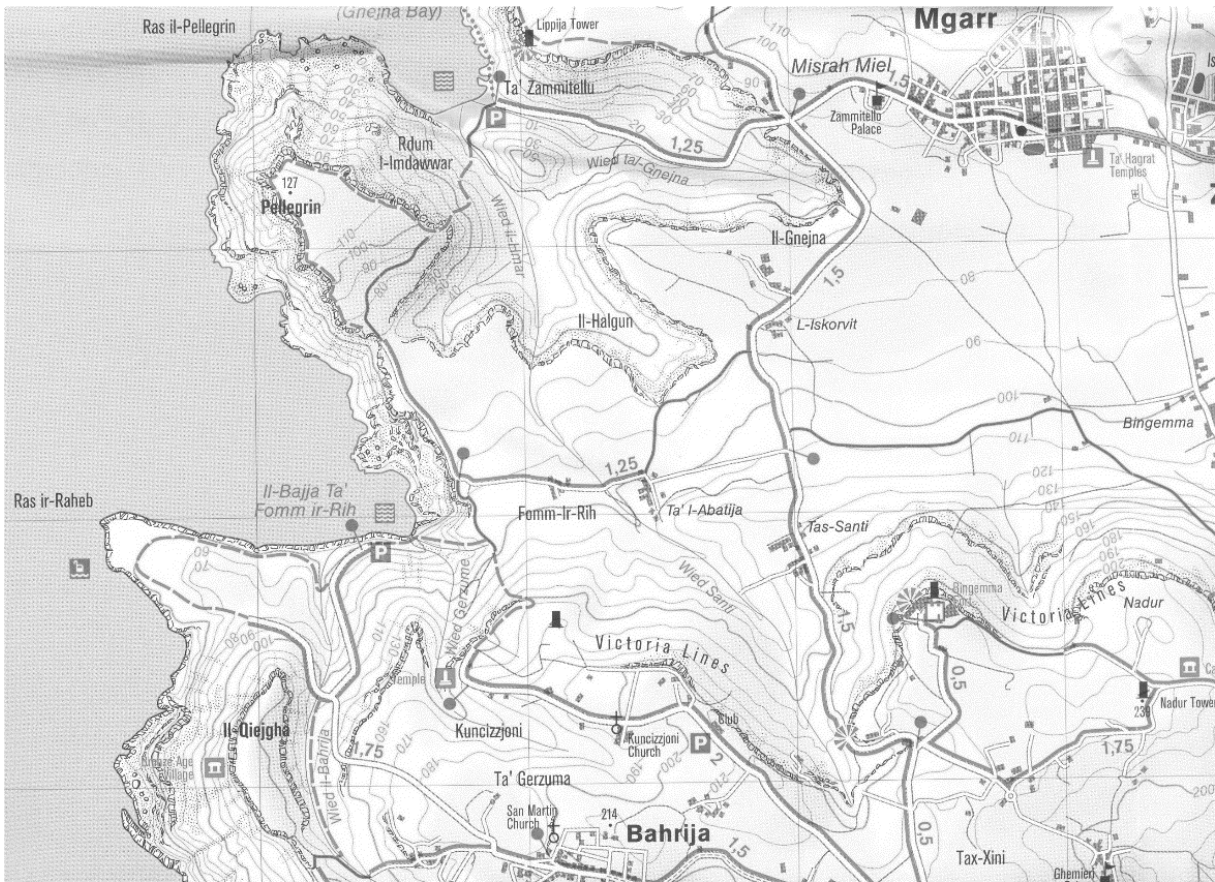


Figure 3: Topographic map of a location in the West of Malta

(Source <http://www.weather-forecast.com>)

- (a) Name **TWO** methods by which elevation can be shown on a topographic map. (4)
- (b) Discuss **ONE** advantage and **ONE** disadvantage of each method listed in (a). (6)
- (c) Describe the topography in the north-western quadrant of Figure 3 centred around the 'Pellegrin' headland. (10)

(Total: 20 marks)

Please turn the page.

12. Figure 4 shows a map of Mosta with houses built before 1960. Note that the information about the houses is not real. The area under study is 948,502 m².

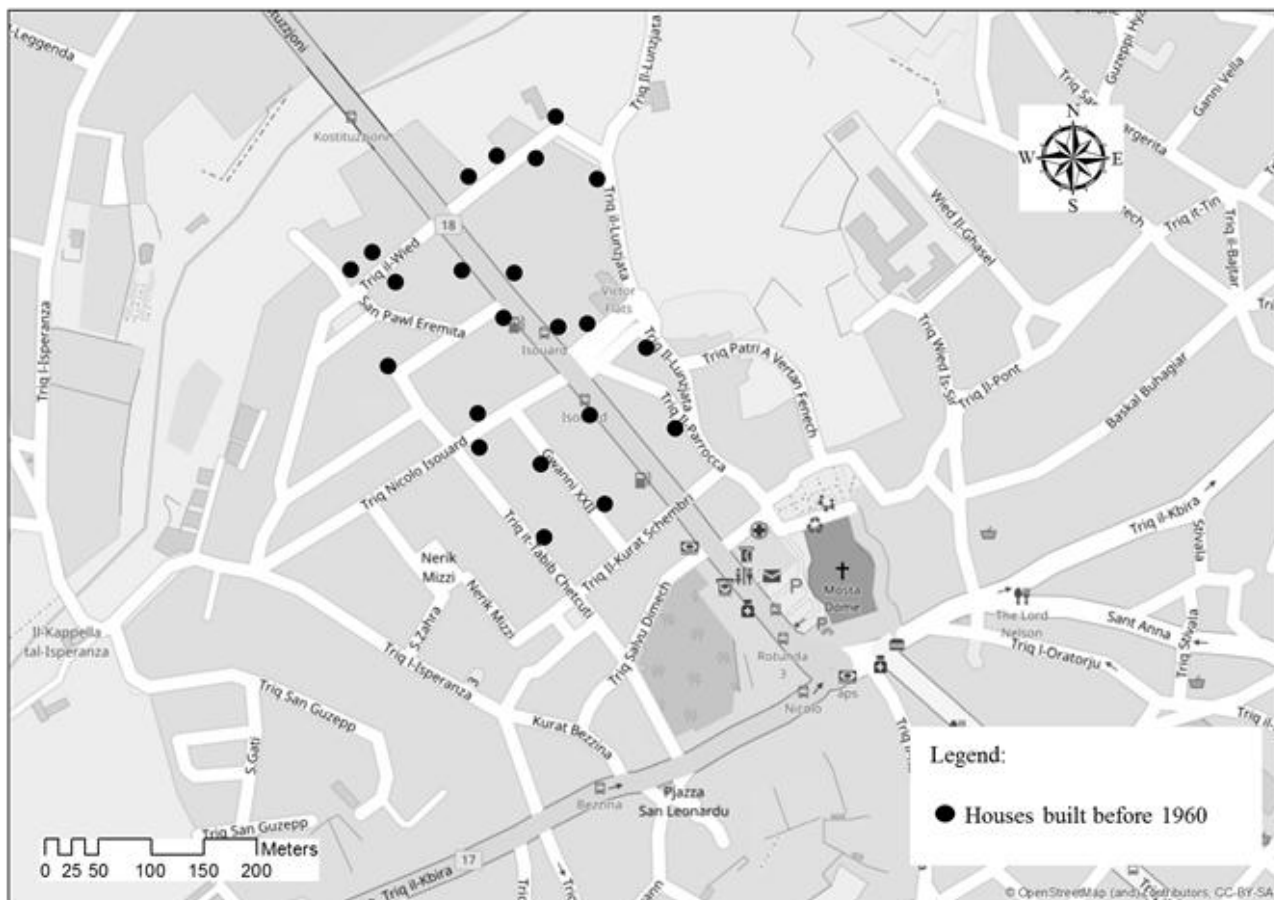
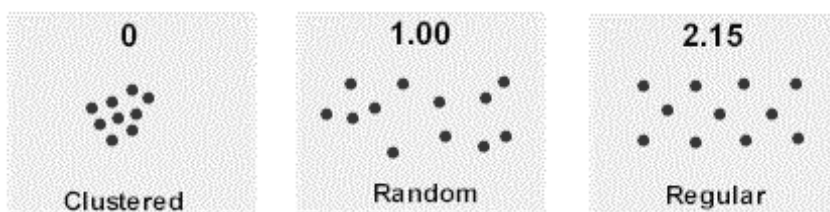


Figure 4: A map of Mosta with houses built before 1960
 (Source: adapted from OpenStreetMap in ESRI 2017)

(a) Work out the Nearest Neighbour Index for the information provided in figure 4. The formula is the following:

$$NNI = 2\bar{D} \sqrt{(N/A)}$$

The nearest neighbour formula will produce a result between 0 and 2.15, where the following distribution patterns form a continuum:



(10)

(b) Interpret the answer obtained in part a of this question.

(10)

(Total: 20 marks)