

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

SUBJECT: GEOGRAPHY
DATE: 17th May 2016
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. (a) Explain how the sea has a moderating influence on temperatures in places with a Mediterranean climate. (10 marks)
(b) Heatwaves, long spells of drought and gale storms are three extreme weather conditions that prevail in the Mediterranean region. Briefly describe the weather conditions and causes associated with any **two** of these weather conditions in the Mediterranean region. (10 marks)
2. (a) Figure 1 shows a section of the Maghlaq Fault along the western coast of the Maltese Islands. With the help of a labelled diagram, explain how the Maghlaq Fault was formed. (10 marks)
(b) How did the Maghlaq Fault influence the shape of the western and eastern coastlines of Malta? Include labelled diagrams to illustrate your answer. (10 marks)



Figure 1: Land movement along the Maghlaq Fault
(Source: <http://www.timesofmalta.com>)

3. (a) Name **one** saline marshland in the Maltese Islands. (2 marks)
- (b) Describe the main characteristics of the saline marshland named in (a). (10 marks)
- (c) Briefly explain how saline marshlands are formed. (8 marks)

Section 2: Human Geographical Processes

4. Study the data in Table A which shows the percentage of the total population in two continents divided into three age groups.
 - (a) Explain why the population of a place is divided into these three age groups in several population studies. (3 marks)
 - (b) Describe **two** main differences in the population structure of the two continents. (4 marks)
 - (c) State, which of the two continents is Europe and which is Africa. (1 mark)
 - (d) Describe a change in the population structure of Continent A and another one for Continent B that you would expect to see in the next decades. (4 marks)
 - (e) Name **two** factors that contribute to low birth rates in many developed countries. (4 marks)
 - (f) Discuss **two** problems that such low birth rates cause. (4 marks)

Table A

Age Group	Continent A	Continent B
0 – 15	15.6%	39.8%
16 – 64	67.6%	56.6%
65 +	16.8%	3.6%

(Source: UN, Dept. of Economic and Social Affairs, Population Division, 2011)

5. Figure 2 shows the global international tourism revenue for the years 2000 to 2014.
 - (a) Give **two** reasons for the worldwide increase in tourism. (4 marks)
 - (b) Name a less developed country which has seen a growth in its tourism industry. (1 mark)
 - (c) Give **three** reasons why this increase has been welcomed by many less developed countries. (6 marks)
 - (d) Discuss **three** social and/or economic disadvantages of the tourism industry in less developed countries. (9 marks)

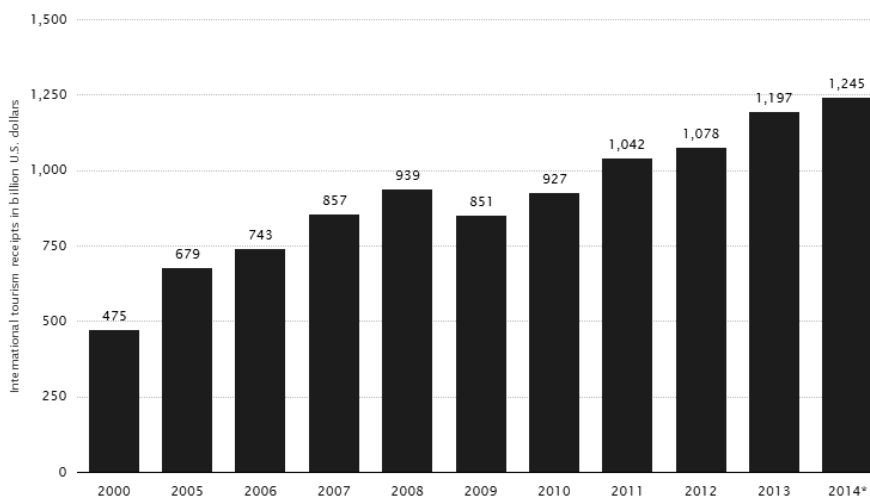


Figure 2: Global international tourism revenue (2000-2014)

(Source: <http://www.statista.com>)

6. (a) Name **one** large city in Europe. (1 mark)
- (b) Describe the site and situation of the city you chose in (a). (5 marks)
- (c) List **five** functions of the city you chose in (a). (5 marks)
- (d) Discuss **three** examples of social and environmental problems associated with large urban areas. (9 marks)

Section 3: The Man-Environment Relationship

7. Population growth and environmental stress are closely related issues. With reference to the data shown in Figure 3, discuss the environmental challenges which are brought about by current and future population growth trends on each of the following:
 - (a) Agricultural land;
 - (b) Habitat;
 - (c) Water;
 - (d) Air quality. (20 marks)

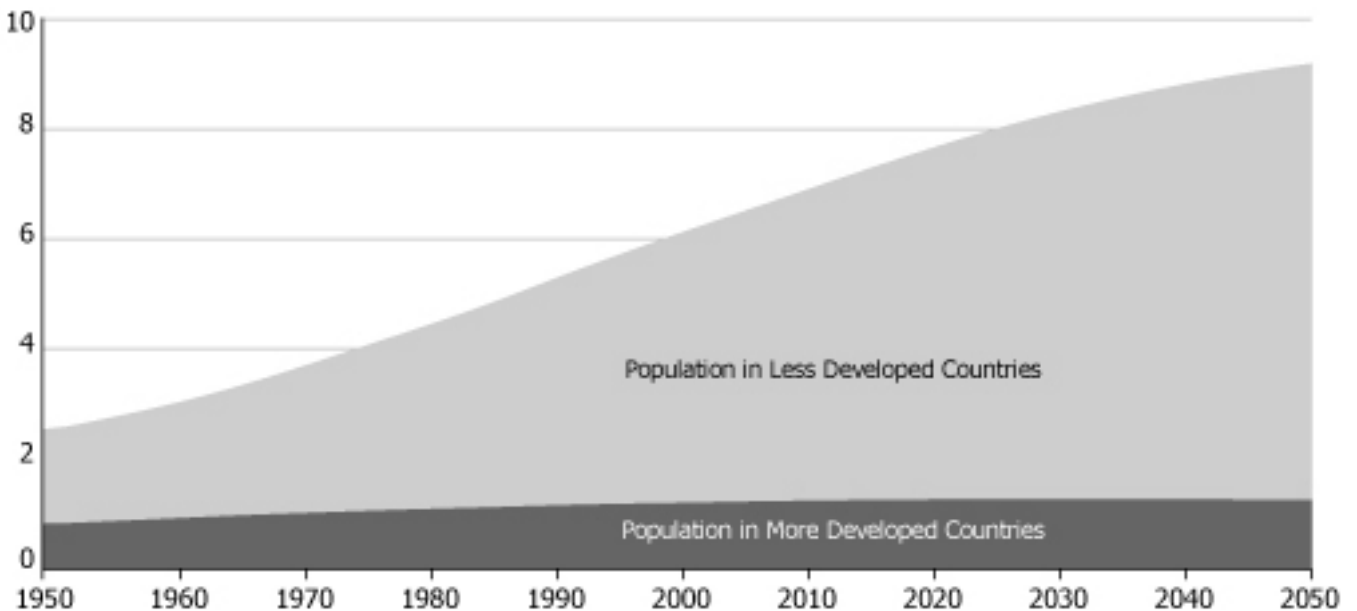


Figure 3: World population in billions: 1995-2050 (projected).
 (Source: <http://www.prb.org>)

8. Maquis, garigue and steppe vegetation communities are natural habitats common to rural areas of the Maltese Islands.
 - (a) Define each of the above-mentioned vegetation communities. (9 marks)
 - (b) Choose only **one** of the aforementioned communities and outline the adaptations which make this community well-adapted to survive within the context of a semi-arid climate. (6 marks)
 - (c) Explain how sheep and goat grazing negatively impact vegetation communities such as those mentioned in the statement above. (5 marks)

9. Soil is a vital but endangered resource. Figure 4 will aid you in answering the following questions.
- (a) Explain in detail **three** human-induced processes which encourage soil erosion. (12 marks)
 - (b) Mention and briefly describe **four** soil conservation measures which can be adopted in order to minimise soil erosion. (8 marks)



Figure 4: Soil erosion.
 (Source: <http://www.dw.com>)

Section 4: Fieldwork and Mapwork Skills

10. (a) With reference to a fieldwork topic of your choice, explain why data gathering, data analysis and data presentation are an essential component of any geographic field investigation. (9 marks)
- (b) Identify an area in the Maltese archipelago containing exposed clay slopes and briefly describe **four** field-research activities that can be carried out as part of a geographical-based enquiry in this area. (11 marks)
11. A group of students wanted to check if there is a correlation between the pH reading of soil and distance from the shoreline. The following measurements were taken:

Table B

Distance from the shoreline/m	pH of soil
1	3.4
2	2.3
4	3.5
5	5.3
8	5.2
9	6.2
10	5.8

- (a) State the Null Hypothesis. (2 marks)
- (b) Calculate the Spearman Rank Correlation Coefficient (R) between the two sets of data in Table B, using the following formula and showing all working:

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

(8 marks)

- (c) State whether the Null Hypothesis is accepted or rejected and why (use the words ‘95% confidence’ and ‘chance’). You can refer to Figure 5 to reach your conclusion. (6 marks)
- (d) List **two** limitations of this significance test. (4 marks)

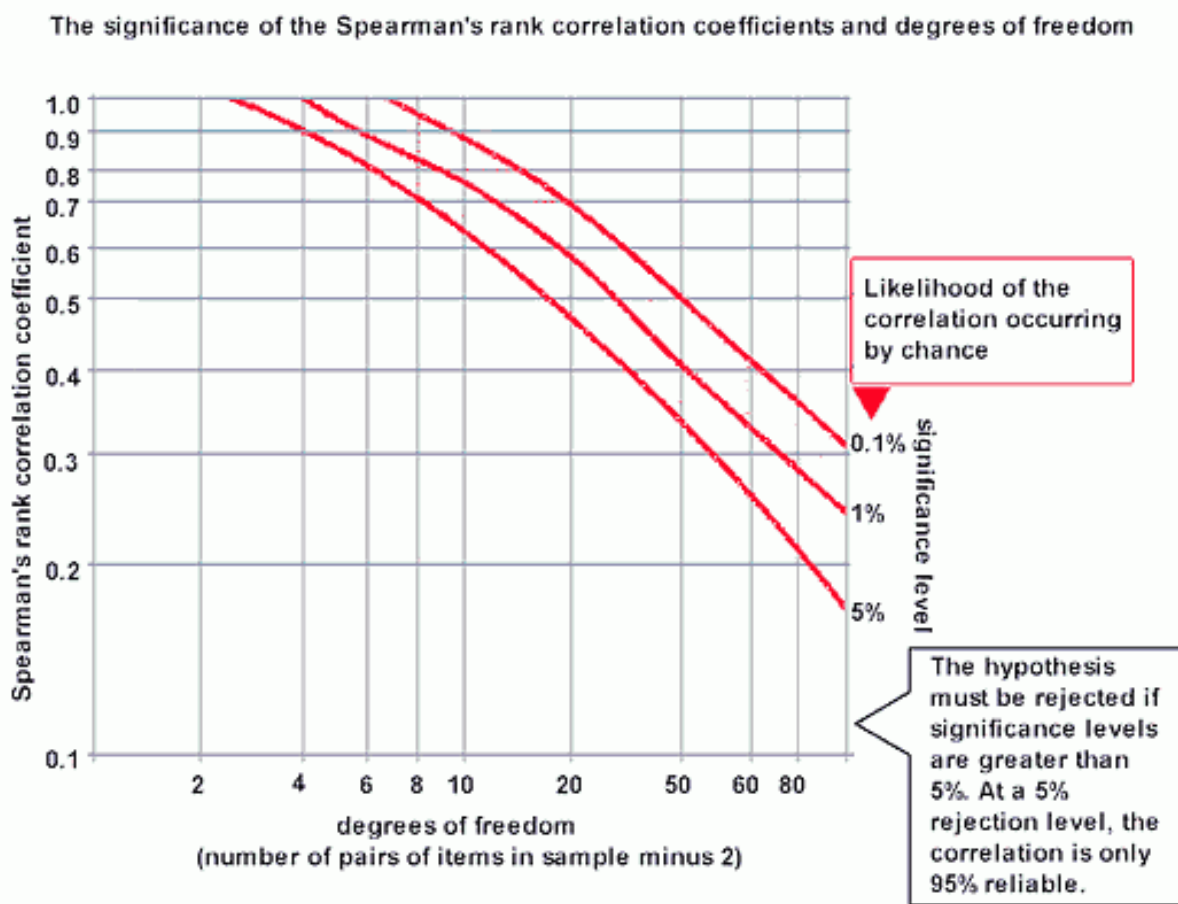


Figure 5: Spearman Rank significance table
 (Source: <http://geographyfieldwork.com>)

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12. In Figure 6 wind speed for a specific meteorological station is shown on a rose diagram.
- (a) Describe how both wind speed and direction can be read from the rose diagram in Figure 6. (12 marks)
 - (b) How are days with no wind shown on the rose diagram in Figure 6? (2 marks)
 - (c) Explain **one** limitation of the rose diagram in Figure 6. (2 marks)
 - (d) Explain **one** way how Figure 6 can be modified to give more accurate information about wind speed at Boulder station. (4 marks)

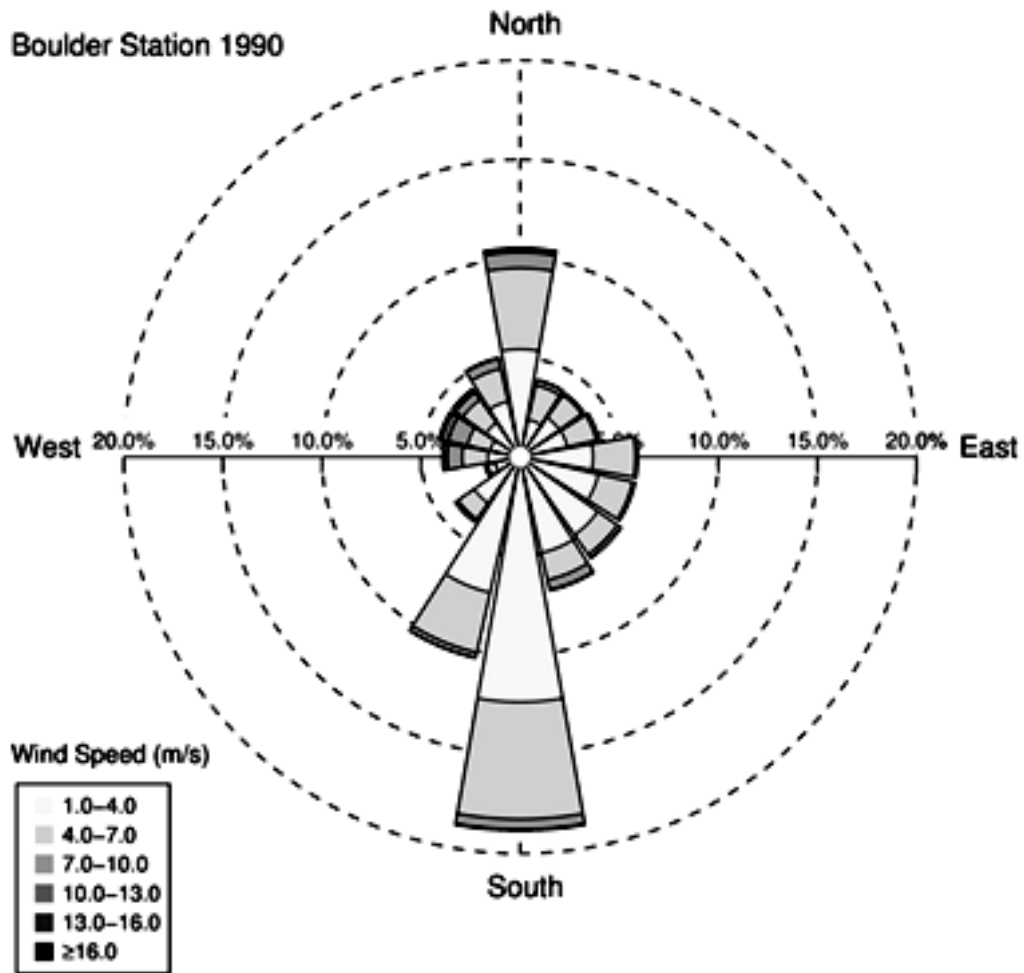


Figure 6: A rose diagram
 (Source: <http://www.idlcoyote.com>)