



SUBJECT: **Geography**  
DATE: 4<sup>th</sup> September 2023  
TIME: 4:00 p.m. to 7:05 p.m.

### Directions to Candidates

Answer a total of **FOUR** questions: **TWO** questions from **each** of the two sections.  
The use of non-programmable calculators is permitted. **ALL** questions carry equal marks.

### SECTION A: PHYSICAL GEOGRAPHICAL PROCESSES

1. Figure 1 shows the Tri-cellular model of global atmospheric circulation.

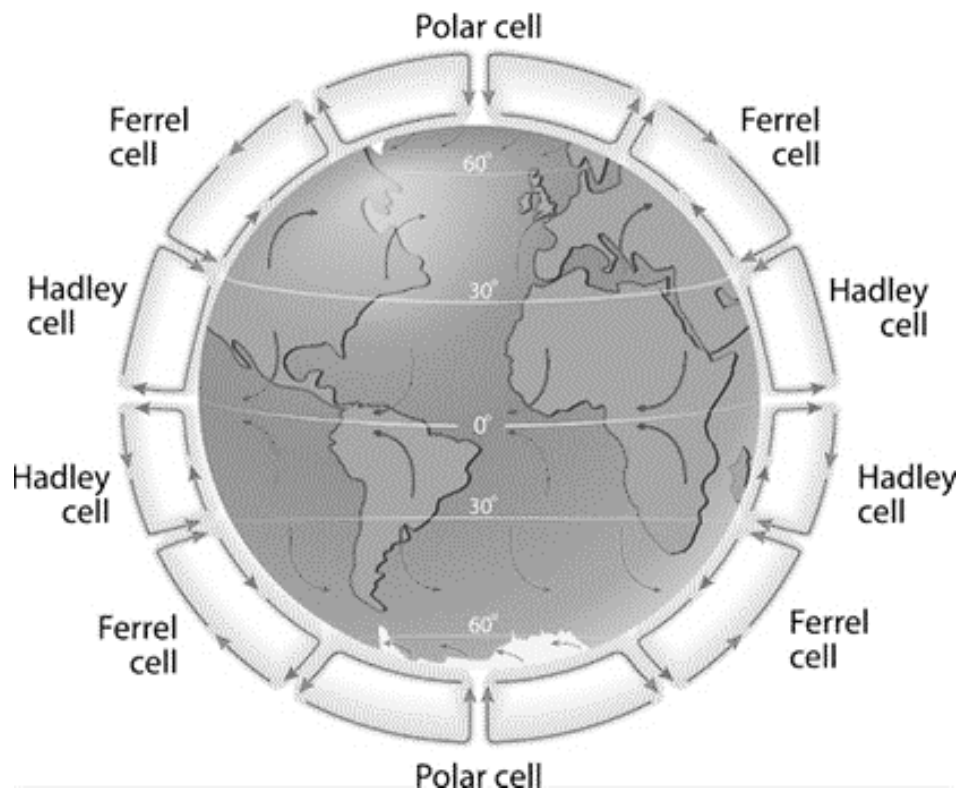


Figure 1: Global atmospheric circulation.

(Source: [https://www.coolgeography.co.uk/gcsen/NH\\_Global\\_Atmospheric\\_Circulation.php](https://www.coolgeography.co.uk/gcsen/NH_Global_Atmospheric_Circulation.php))

- (a) Describe the processes which generate the Hadley cells located north and south of the Equator. (10)
- (b) With the help of diagrams, discuss how seasonal shifts in the location of the ITCZ influence the Mediterranean climatic regime. (15)

**(Total: 25 marks)**

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2. Figure 2 shows seafloor spreading at the Mid-Atlantic ridge.

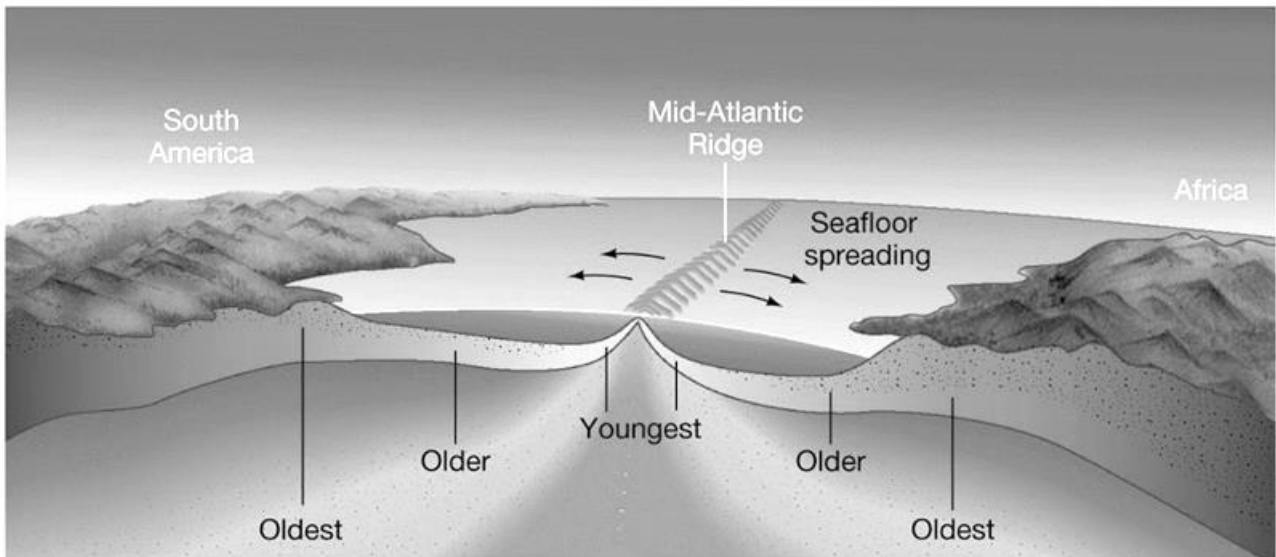


Figure 2: Seafloor spreading.  
 (Source: Pearson Education Inc 2011)

- (a) Briefly describe the theory of plate tectonics. (5)
- (b) Discuss the process of seafloor spreading and name **TWO** landforms associated with this divergent type of plate boundary. (10)
- (c) Briefly describe the plate boundaries found in the Mediterranean Region. (4)
- (d) Describe **TWO** landforms resulting from the boundaries mentioned in part (c). (6)

**(Total: 25 marks)**

- 3. (a) Name **ONE** input and **ONE** output in a drainage basin. (4)
- (b) Explain the difference between the following terms:
  - i) infiltration and percolation; and (6)
  - ii) throughflow and groundwater flow. (6)
- (c) Vegetation is known to help in minimizing the risk of flooding. Explain why by referring to local examples. (9)

**(Total: 25 marks)**

4. Figure 3 shows a weather chart for the North Atlantic and the Mediterranean.

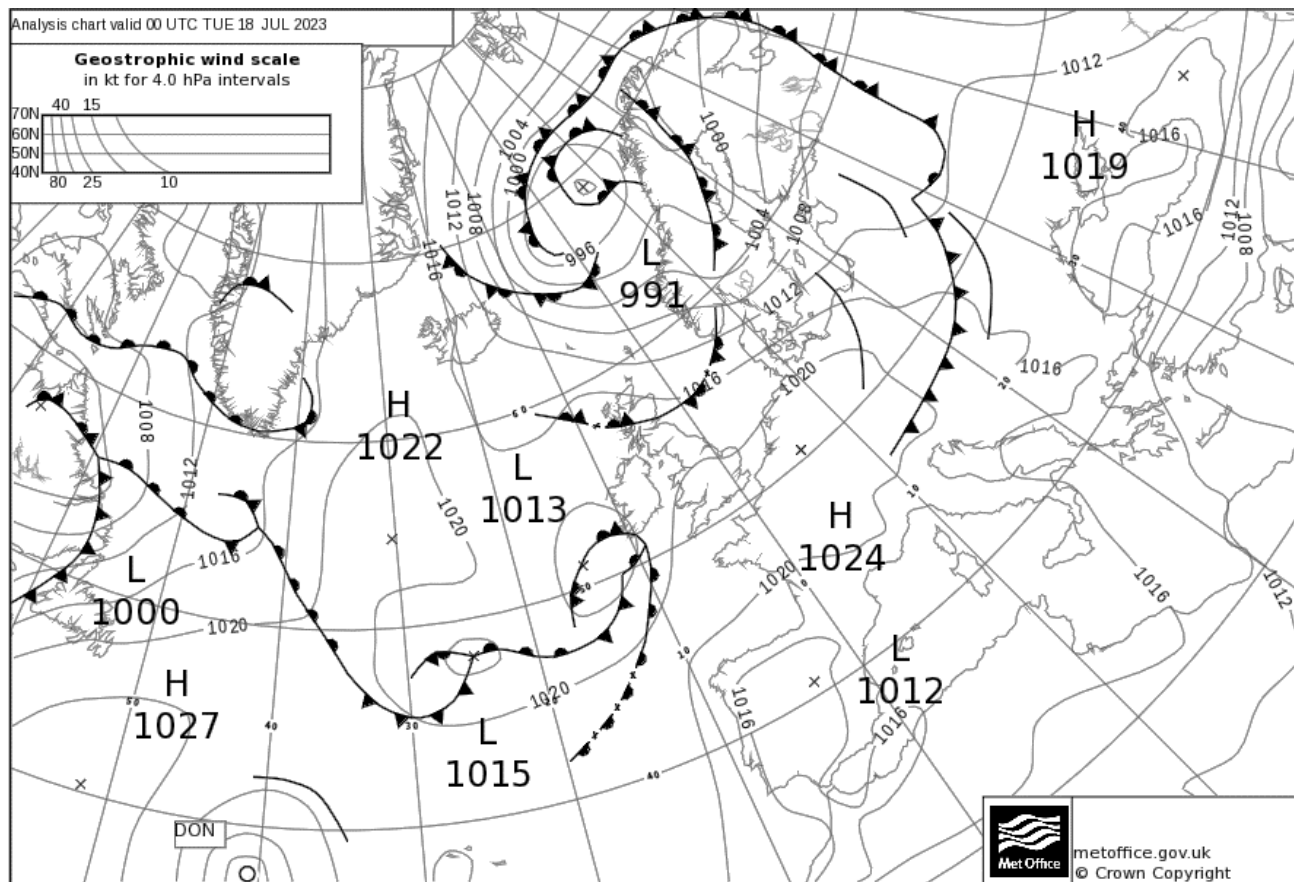


Figure 3: Weather chart 18/07/2023.  
 (Source <https://www.metoffice.gov.uk/weather/maps-and-charts/surface-pressure>)

- (a) Briefly describe and draw symbols which represent the following:
  - i) a warm front; (2)
  - ii) a cold front; and (2)
  - iii) an occluded front. (2)
  
- (b) Refer to Figure 3 above and describe the weather conditions over:
  - i) the Mediterranean; (5)
  - ii) eastern Europe; and (5)
  - iii) the Scandinavian peninsula. (5)
  
- (c) According to Figure 3, what will the weather be like over the Maltese Islands for the next 24 hours? (4)

**(Total: 25 marks)**

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**SECTION B: HUMAN GEOGRAPHICAL PROCESSES**

5. Figure 4 shows three population pyramids of Malta, Italy and Finland for the year 2023.

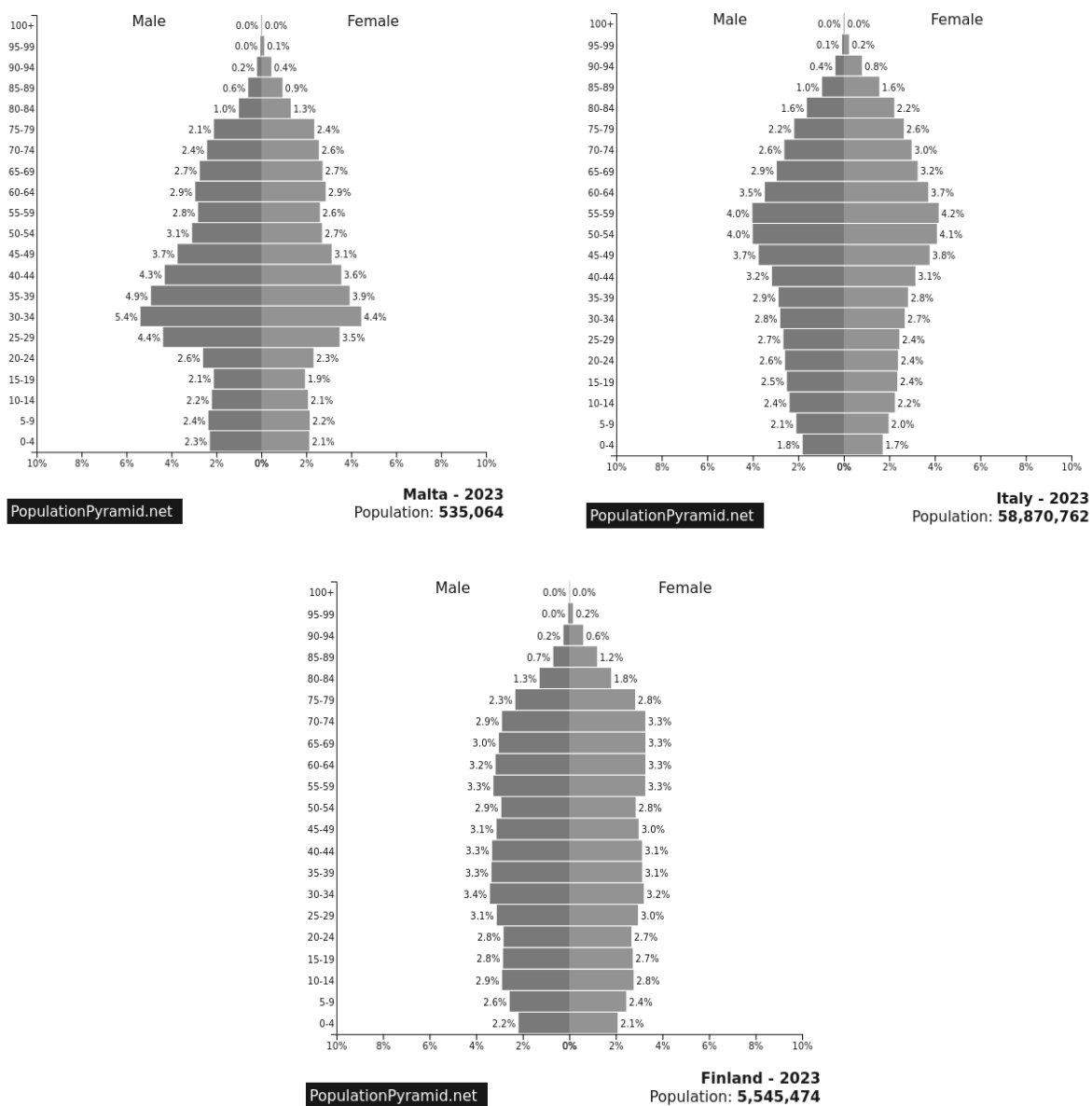


Figure 4: Population pyramids of Malta, Italy and Finland for the year 2023. (Source: PopulationPyramid.net)

- (a) Explain why geographers use population pyramids. (5)
- (b) Describe the **THREE** population pyramids in Figure 4. (15)
- (c) Briefly explain the reason for population growth in the workforce groups in **both** Malta and Italy. (5)

**(Total: 25 marks)**

6. Figure 5 shows an illustration of settlement hierarchy.

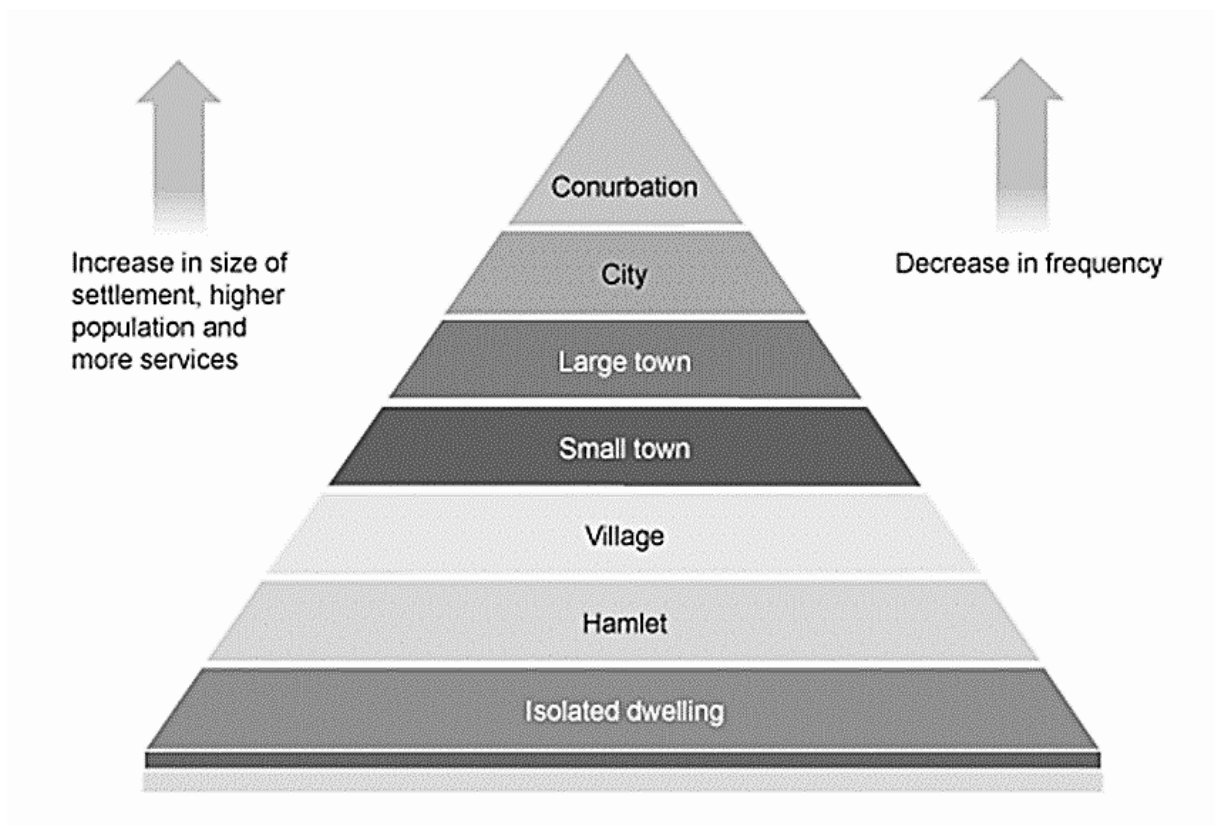


Figure 5: Hierarchy of settlements.  
(Source: <https://geography-revision.co.uk>)

- (a) Discuss the relationship between settlement sizes and:
  - i) population; (6)
  - ii) function; and (6)
  - iii) services available. (6)
  
- (b) Briefly explain the mobility (transport) related advantages of living in larger settlements. (7)

**(Total: 25 marks)**

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7. (a) Use a diagram to explain Von Thünen's model of agricultural land use. (10)
- (b) Describe **FOUR** assumptions that were used by Von Thünen to create the model of agricultural land use. (12)
- (c) Briefly explain how Von Thünen's model of agricultural land use is still applicable today. (3)

**(Total: 25 marks)**

8. (a) During the 1980s and 1990s Malta had several waste dumping sites. Discuss **THREE** problems associated with such dumping sites. (9)
- (b) Discuss **TWO** waste management initiatives that are currently being implemented in Malta. (10)
- (c) Briefly explain how the change from dumping site to engineered landfill has improved the situation in Maghtab. (6)

**(Total: 25 marks)**