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SUBJECT:	<b>Geography</b>
PAPER NUMBER:	I
DATE:	3 <sup>rd</sup> September 2018
TIME:	9:00 a.m. to 11:05 a.m.

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Answer **THREE** questions in total, one from each section. Questions carry equal marks.

**SECTION A: PHYSICAL GEOGRAPHY OF THE MALTESE ISLANDS**

**Choose ONE question from this section.**

1. Freshwater habitats are among the most scarce on the islands but at the same time host an interesting and rich variety of flora and fauna.
  - (a) Describe the ecological and spatial characteristics of freshwater ecosystems in the Maltese Islands. Supplement your answer with examples of each. (14 marks)
  - (b) The limited amount of annual rainfall is a limiting factor for freshwater ecosystems to thrive. However, anthropogenic intervention is also playing a crucial role in the degradation of such habitats. Explain the various negative anthropogenic impacts on freshwater environments. (10 marks)
  
2. A detailed soil survey carried out by D.M. Lang in 1956-57, and published in 1960, classified Maltese soil formations into three main categories.
  - (a) Describe the main characteristics of these soil formations. (12 marks)
  - (b) Soil is a precious resource that takes thousands of years to form but is lost forever through erosion, sometimes in a very short period of time. Describe **THREE** rainfall-induced soil erosion processes and **THREE** anthropogenic practices that exist in Malta and are leading to accelerated soil erosion. (12 marks)

***Questions continues on next page***

3. Malta is densely populated but poorly endowed with freshwater resources. Meeting a high and rapidly increasing demand for water while protecting and conserving the resource base and the environment is a major challenge. (FAO, 2006: 1)
  - (a) Outline the main reasons for the lack of water resources in Malta. (6 marks)
  - (b) Describe the principal water supply sources in the Maltese Islands and explain the constraints related to their exploitation. (12 marks)
  - (c) Explain why sea level rise poses a serious threat to sources of water supply in Malta. (6 marks)

**SECTION B: HUMAN GEOGRAPHY OF THE MALTESE ISLANDS**

**Choose ONE question from this section.**

4. The Maltese fishing industry is small and vulnerable; it contributes to 0.1% of Malta’s GDP (FAO, 2005).
  - (a) Discuss in detail **TWO** factors that are negatively influencing the Maltese fishing industry. (12 marks)
  - (b) Discuss **TWO** measures that can help improve the fishing industry in Malta. (12 marks)
  
5. Tourism is one of the main industries in Malta. Figure 1 shows the number of inbound tourists between 2013 and 2015.

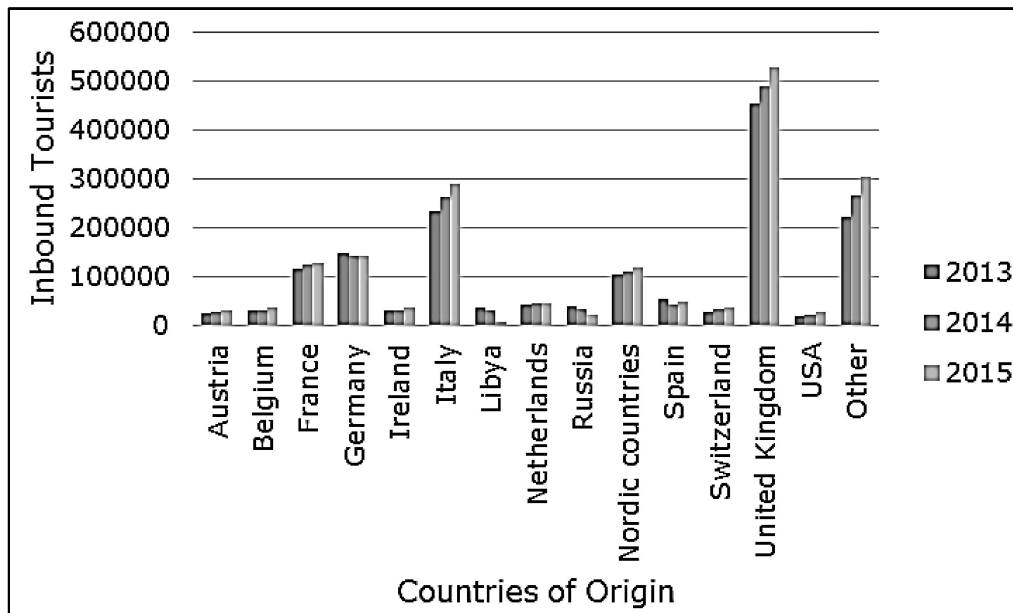


Figure 1: Inbound Tourists in Malta (Malta Tourism Authority, 2016).

- (a) Describe the situation of inbound tourism in Malta as shown in Figure 1. Outline possible reasons why an increase was registered with most countries and provide possible reasons why numbers decreased from a few others. (10 marks)
- (b) Briefly discuss **TWO** possible reasons why tourists are attracted to Malta. (4 marks)
- (c) Tourists cause pressure on airport infrastructure. Describe **TWO** types of pressures caused by tourists on Malta's airport infrastructure. (10 marks)
6. 'Land is one of Malta's most important environmental media, providing the context for its life support systems, and thus for biodiversity and human life itself' (EEA, 2010).
- (a) Briefly discuss **TWO** reasons why land is of utmost importance in Malta. (6 marks)
- (b) Discuss **TWO** types of land-use conflicts in Malta. (10 marks)
- (c) Explain **TWO** measures that can be implemented to combat land-use conflicts in the Maltese Islands. (8 marks)

### **SECTION C: FIELDWORK AND STATISTICAL TECHNIQUES**

**Choose ONE question from this section.**

7. The choropleth map is one of the most frequently used maps in geography.
- (a) List **FOUR** characteristics of a choropleth map. (4 marks)
- (b) Briefly discuss **TWO** advantages and **TWO** disadvantages of choropleth maps. (8 marks)
- (c) Figure 2 shows a choropleth map of old age benefits' beneficiaries per 1000 population for the Maltese Islands. Analyse Figure 2 and provide potential reasons for patterns shown in this choropleth map. (12 marks)

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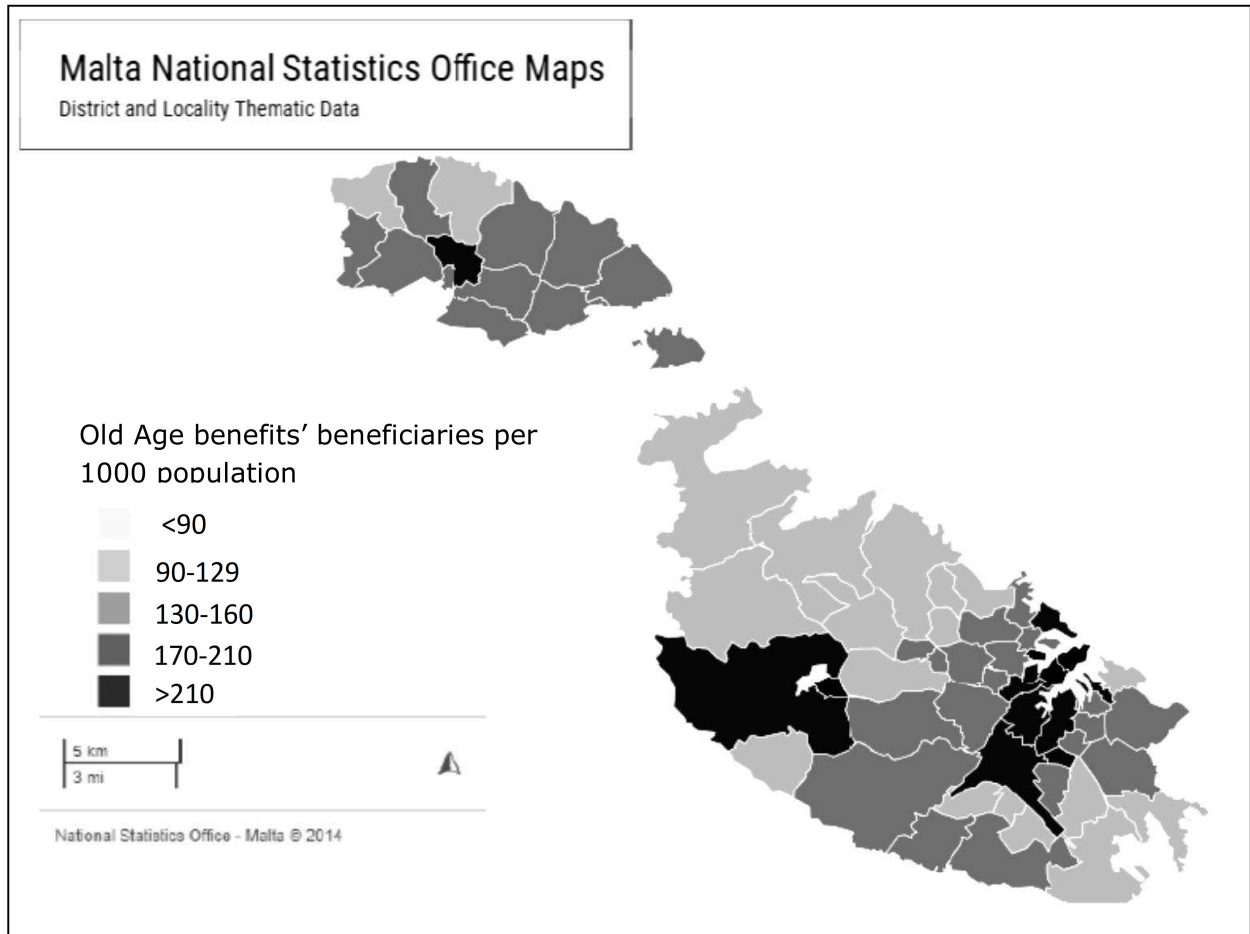


Figure 2: Old Age Benefits' Beneficiaries per 1000 population (NSO, 2014)

8. Figure 3 shows an example of a soil horizon.

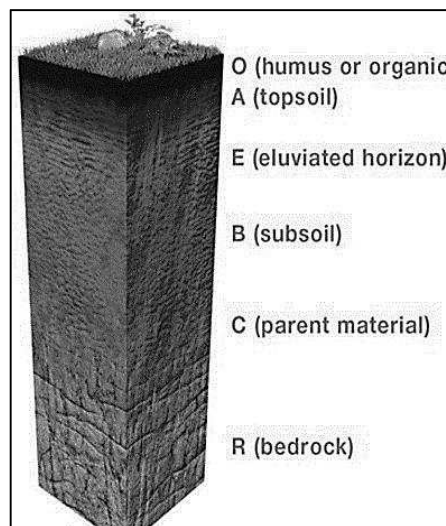


Figure 3: A typical soil horizon.

(<https://www.pmfias.com/soil-profile-soil-horizon-soil-types-sandy-clayey-loamy/>)

- (a) Give a detailed account of how one should examine a soil horizon. Your account should include the required apparatus and a rough sample of a soil recording sheet with soil profile details. (16 marks)

(b) When conducting fieldwork in physical geography, one method of sampling is by using transects.

(i) Briefly explain transect sampling. Support your answer with examples. (4 marks)

(ii) Imagine that you are conducting a fieldwork along the coast and you are observing the distribution of *Inula crithmoides* (Golden Samphire) with distance (up to 100m from the coastline). Considering you are using transect sampling, illustrate how you would tabulate your results. (4 marks)

9. 'Fieldwork is the first-hand experience of going out of a classroom to observe and record what is present in an area' (Skinner et al., 1999).

(a) A common practice when doing fieldwork is sampling. Briefly explain **FOUR** reasons why sampling is desirable when carrying out fieldwork. (8 marks)

(b) 'The collection of data should avoid bias'. Discuss **TWO** reasons why bias happens and give **ONE** example for each reason mentioned. (8 marks)

(c) Point sampling is one of three spatial sampling methods. Three commonly used sampling techniques are the 'random', 'stratified' and 'systematic' methods (Lenon & Cleves, 1997). Choose **TWO** of these three commonly used sampling methods and using the point spatial sampling method:

(i) draw a sketch of the two chosen sampling methods. (4 marks)

(ii) explain each of the two chosen sampling methods. (4 marks)



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SUBJECT:	<b>Geography</b>
PAPER NUMBER:	II
DATE:	4 <sup>th</sup> September 2018
TIME:	9:00 a.m. to 11:05 a.m.

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Answer **THREE** questions in total, one from each section. Questions carry equal marks.

**SECTION A: ATMOSPHERIC PROCESSES**

**Choose ONE question from this section.**

1. Atmospheric circulation is the large-scale movement of air by which heat is distributed on the surface of the Earth.
  - (a) Describe the key characteristics needed for wind formation. (4 marks)
  - (b) Explain the Intertropical Convergence Zone (ITCZ). Use a diagram to support your answer. (6 marks)
  - (c) Explain how the ITCZ varies with seasons. (4 marks)
  - (d) Name the type of precipitation associated with the ITCZ. (2 marks)
  - (e) Explain the meaning of Rossby waves and highlight their impact on the respective weather systems. (8 marks)

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2. Figure 1 shows a storm surge in 2012 in New York City.



Figure 1: Storm surge in New York City in 2012  
(<http://www.nydailynews.com/new-york/article-1.2416531>)

- (a) Define the term 'storm surge' and explain its main causes. (5 marks)
- (b) List **FOUR** key consequences of storm surges. (4 marks)
- (c) Explain **THREE** ways to mitigate the effects of storm surges. (9 marks)
- (d) Describe **THREE** ways how climate change is amplifying the risks associated with storm surges. (6 marks)
3. The monsoon is experienced, amongst other areas, in Southeast Asia. The term 'monsoon' is derived from the Arabic word for 'a season' but is more commonly used in meteorology to denote a seasonal reversal of wind direction.
- (a) Explain **THREE** main reasons that cause the monsoon. (6 marks)
- (b) Explain the key characteristics of the summer and winter monsoon. (10 marks)
- (c) Discuss **FOUR** effects of the monsoon on the countries affected. (8 marks)

**SECTION B: GEOMORPHOLOGY**

**Choose ONE question from this section.**

4. 'The earth is neither expanding nor shrinking in size' (Waugh, 1995).
- (a) Draw a detailed cross-section of the internal structure of the earth. Include convection currents and the two types of crust in your sketch. (8 marks)
  - (b) Briefly explain the characteristics of **EACH** layer mentioned in (a). (8 marks)
  - (c) The Mid-Atlantic Ridge is a submarine ridge. Identify and describe the type of plate movement involved and the dynamics that led to the formation of this ridge. (8 marks)
5. A raised beach can be referred to by means of various terms including a marine terrace, a coastal terrace or perched coastline.
- (a) Define the term 'raised beach'. (4 marks)
  - (b) Briefly explain **TWO** characteristics of raised beaches. (4 marks)
  - (c) Explain, in detail and with the aid of a well-labelled diagram, the formation of raised beaches. Provide **THREE** examples of this landform from around the world. (16 marks)
6. Figure 2 shows a coastal dune system at Ramla Bay in Gozo.



Figure 2: Dune system at Ramla Bay, Gozo (Times of Malta, 2017)

- (a) Explain **TWO** characteristics that are necessary for the formation of coastal dunes. (8 marks)
- (b) Explain **FOUR** anthropogenic activities that lead to the degradation of dunes. (8 marks)
- (c) Discuss **TWO** conservation measures that help stabilise coastal dune systems. (8 marks)



**SECTION C: BIOSPHERIC PROCESSES**

**Choose ONE question from this section.**

7. Savannah is the name given to a climate and/or vegetation type which can be found in parts of tropical Sub-Saharan Africa, the Brazilian Plateau and Northern Australia (Skinner et al., 2003).
- (a) Describe the key climatic features associated with savannah grasslands. (6 marks)
  - (b) Describe **FOUR** important characteristics associated with vegetation in savannah grasslands. (8 marks)
  - (c) Briefly discuss **FIVE** threats savannah grasslands are currently facing. (10 marks)
8. Extreme climatic conditions as those in arid regions often require human intervention as an adaptation technique. However, this can also have its drawbacks. A case in point is the practice of irrigation. Figure 3 shows salinisation of soil.



Figure 3: Salinisation of soil  
(<http://www.fao.org/>)

- (a) Explain **TWO** natural and **TWO** human causes of salinisation. (8 marks)
- (b) Discuss **FOUR** main consequences of salinisation. (8 marks)
- (c) Discuss **FOUR** ways how salinisation of soil can be managed. (8 marks)

9. The Amazonian Rainforest covers over a billion acres, encompassing areas in Brazil, Venezuela, Columbia and the Eastern Andean region of Ecuador and Peru. However, tropical forests are under threat. In the Amazon, around 17% of the forest has been lost in the last 50 years (WWF, 2017).

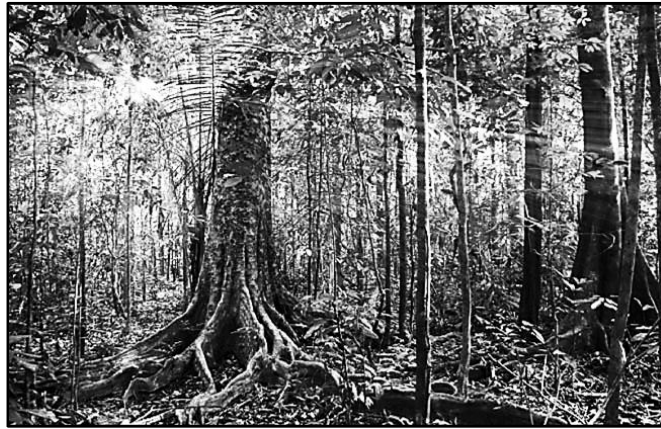


Figure 4: The Amazon Rainforest  
(<https://www.activewild.com/wp-content/uploads/2015/11/Amazon-Rainforest-Trees.jpg>)

- (a) Discuss **FOUR** causes for the destruction of tropical rainforests. (12 marks)
- (b) Discuss **FOUR** consequences resulting from the destruction of tropical rainforests. (12 marks)



SUBJECT: **Geography**  
 PAPER NUMBER: III  
 DATE: 5<sup>th</sup> September 2018  
 TIME: 9:00 a.m. to 11:05 a.m.

Answer **THREE** questions in total, one from each section. Questions carry equal marks.

**SECTION A: HUMAN GEOGRAPHY AND THE DEVELOPING WORLD**

Choose **ONE** question from this section.

1. Agricultural activities are affected by both natural and human factors.
  - (a) List **THREE** types of farming. (3 marks)
  - (b) Explain the impact that altitude and aspect have on agricultural activities. (4 marks)
  - (c) Explain how cultural factors can affect agricultural activities. Make reference to **TWO** factors to support your argument. (8 marks)
  - (d) Discuss what the Common Agricultural Policy (CAP) refers to and state how it affects agricultural activities. (9 marks)
  
2. Figure 1 shows the Clarke-Fisher model.

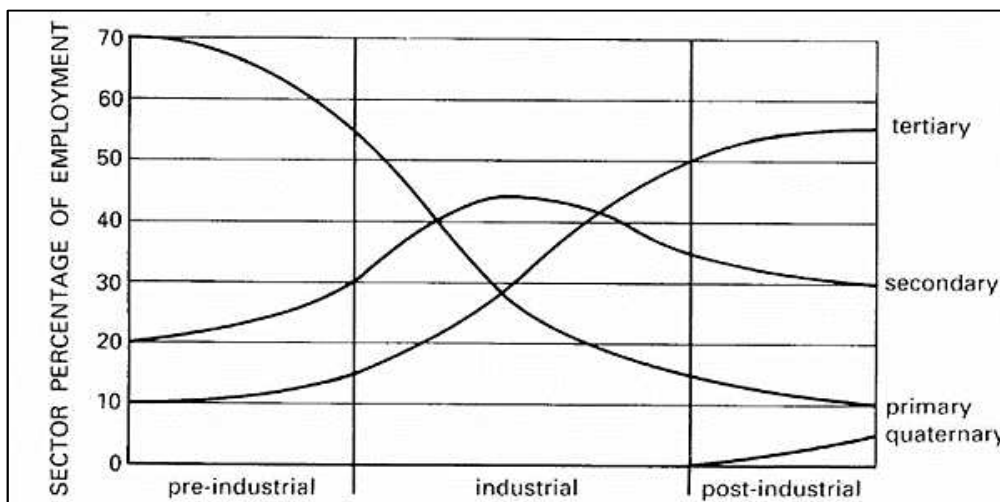


Figure 1: Clarke-Fisher Model  
 (<http://www.cram.com/flashcards/gcse-geography-unit-2-5907202>)

- (a) Explain the main trends with time vis-à-vis the main sectors of the economy as shown by the Clarke-Fisher model in Figure 1. (6 marks)

**Question continues on next page**

- (b) Explain **FOUR** ways how the tertiary sector can negatively affect the natural environment. (12 marks)
- (c) Briefly discuss the relevance of the quaternary sector in Malta's economy. Provide **TWO** examples of employment within this sector to support your argument. (6 marks)

3. Figure 2 shows the global population growth by region between 1950 and 2010. Projections till 2100 are also provided. The y-axis represents population figures in billions.

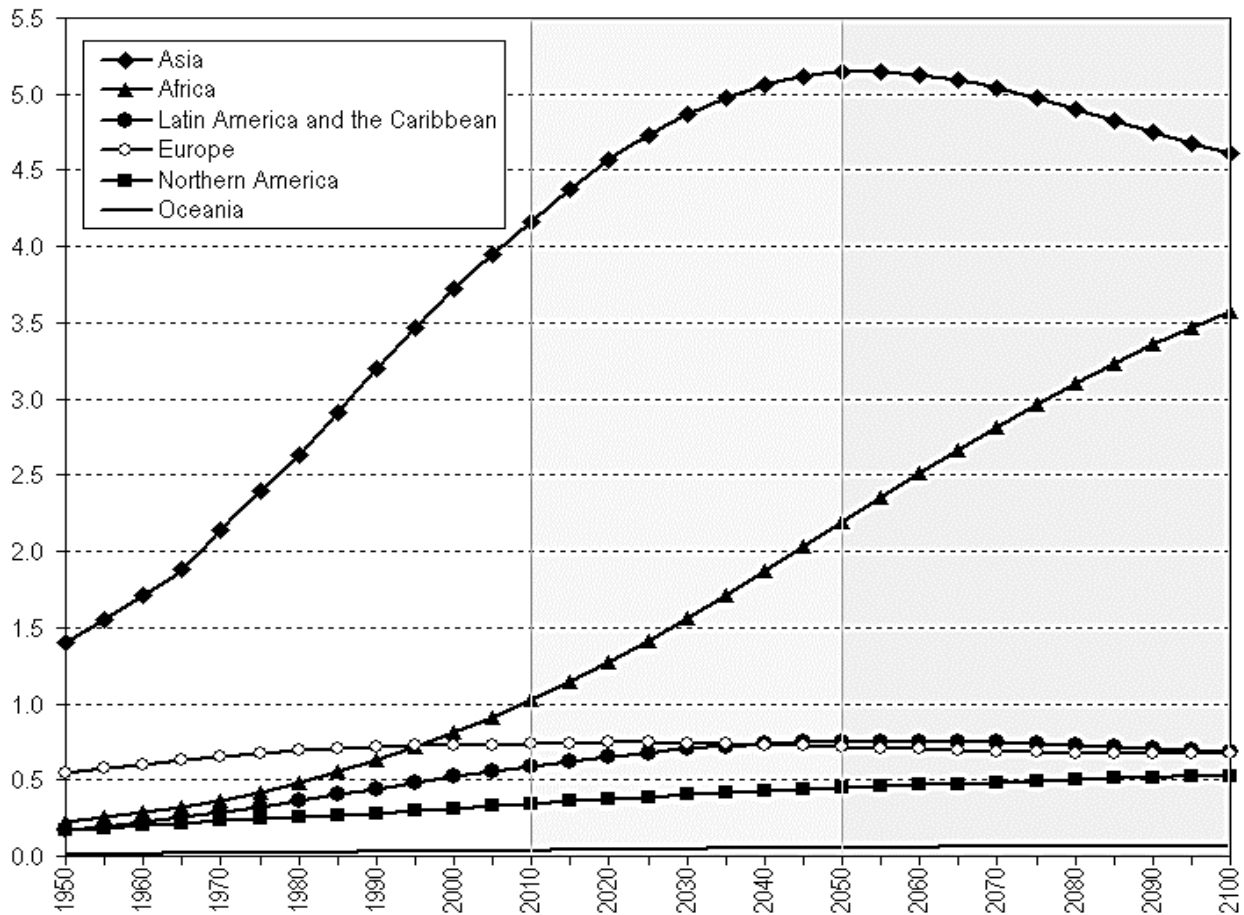


Figure 2: Global population growth by region with projections till 2100. (<http://www.bitsofscience.org/>)

- (a) Describe Figure 2 by making specific reference to how the population is expected to change in the future. Explain **ONE** reason behind this trend. (5 marks)
- (b) Define the term 'carrying capacity'. (3 marks)
- (c) Explain the difference between an overpopulated and underpopulated country. Discuss in relation to the carrying capacity concept. (7 marks)
- (d) Discuss **THREE** human factors that affect population distribution and density around the world. (9 marks)

**SECTION B: ISSUES IN RESOURCE MANAGEMENT**

Choose **ONE** question from this section.

4. Plastic waste is one type of ocean pollution. Figure 3 shows the origin by country of mismanaged plastic waste that ended up in the oceans in 2010.

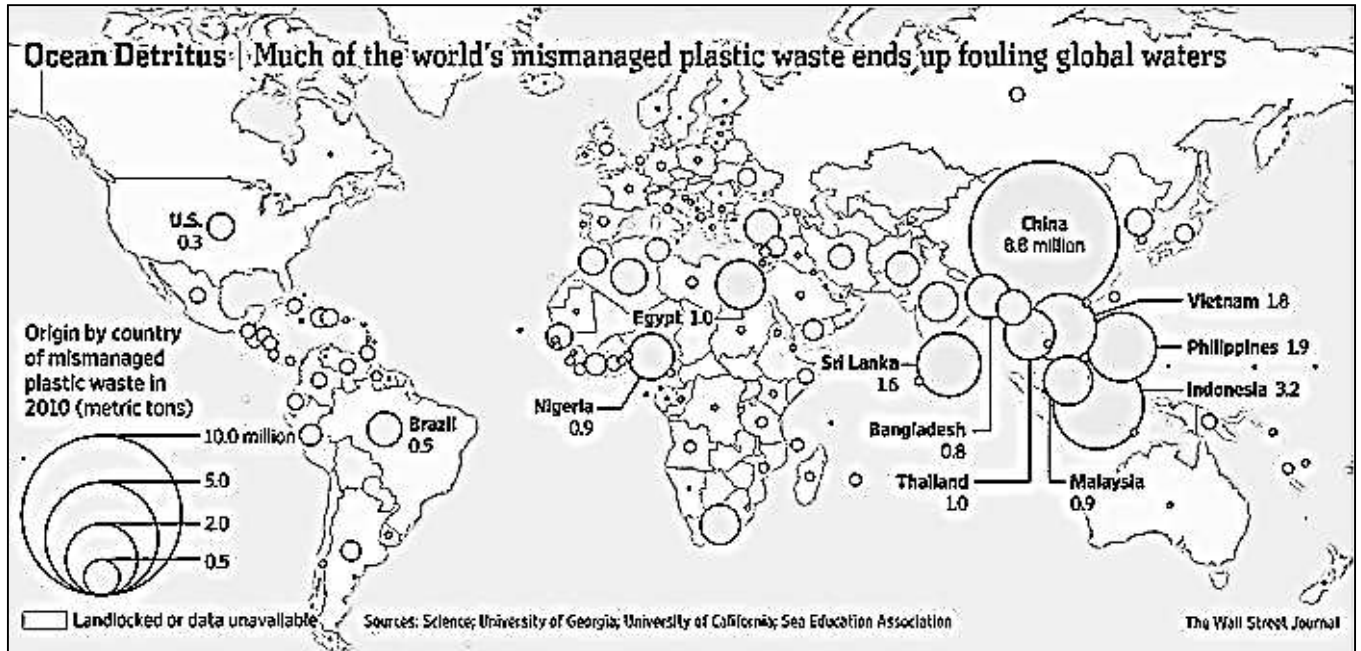


Figure 3: The origin by country of mismanaged plastic waste in 2010 (<https://www.wsj.com/articles>)

- (a) Briefly explain Figure 3. (3 marks)
  
- (b) Apart from plastic waste, briefly explain **THREE** other types of ocean pollution. (9 marks)
  
- (c) Discuss **THREE** consequences of ocean pollution. (12 marks)
  
- 5. Humans today extract and use around 50% more natural resources than they did only 30 years ago (Friends of the Earth Europe, 2017). Consequently, in recent history, resource use was discussed from several perspectives.
  - (a) Explain the following views with regard to resource use: (12 marks)
    - (i) Brundtland Report;
    - (ii) Club of Rome;
    - (iii) Gaia Theory.
  
  - (b) Discuss **SIX** ways how technology is affecting the modern use of resources. (12 marks)

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6. Figure 4 shows the share of energy consumption in the United States between 1776 and 2014.

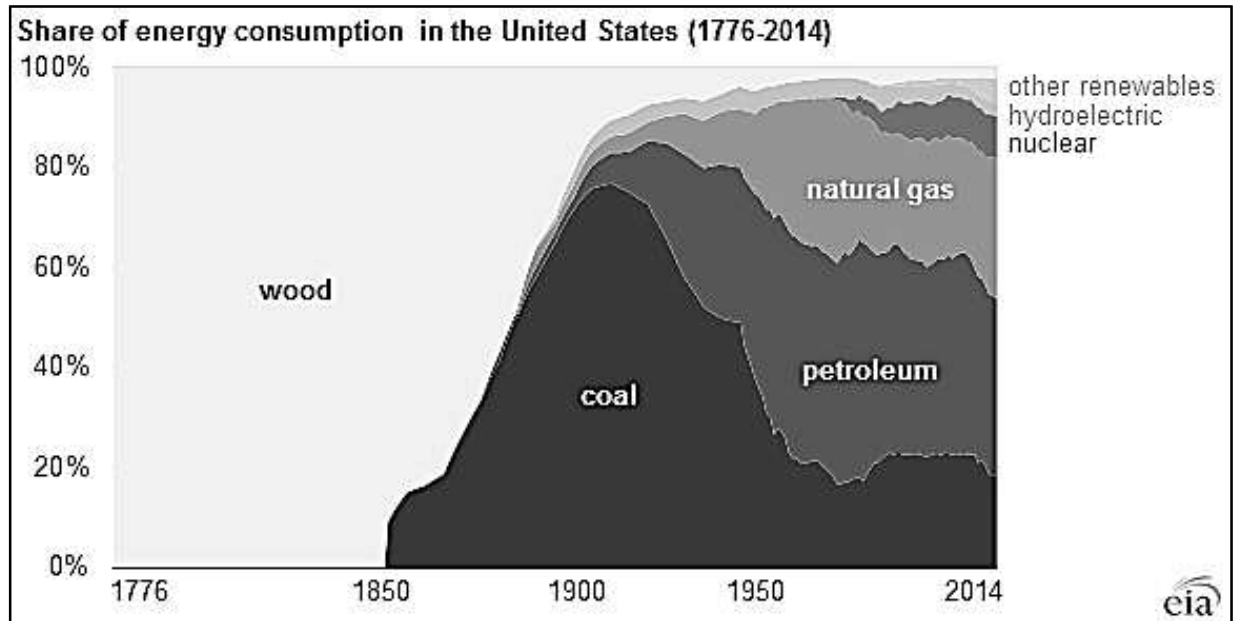


Figure 4: Share of energy consumption in the United States (1776-2014)  
 (<https://www.eia.gov/todayinenergy/detail.php?id=21912>)

- (a) Briefly interpret the main findings of Figure 4. (6 marks)
- (b) List **FOUR** main uses of natural gas. (4 marks)
- (c) Explain **THREE** advantages of using natural gas. (6 marks)
- (d) Explain **FOUR** disadvantages of using natural gas. (8 marks)

**SECTION C: THE GEOGRAPHY OF TOURISM AND RECREATION**

**Choose ONE question from this section.**

7. Tourism involves activities that can have adverse environmental effects (UNEP, 2001).
- (a) Briefly discuss **THREE** negative environmental impacts caused by tourism. Use examples to support your answer. (9 marks)
  - (b) Discuss **THREE** ways in which stakeholders can have a role in controlling the negative environmental impacts of tourism. Support your answer with examples. (15 marks)

8. A holiday area has a life cycle. A good example of this is how Costa del Sol in Spain was influenced by tourists hailing from the UK between 1960 and 1990 (Waugh, 1995).
- (a) Discuss **FOUR** factors that have influenced the life cycle of Costa del Sol and explain how these have changed throughout the decades. (12 marks)
  - (b) Discuss in detail **TWO** reasons why tourists' tastes vis-à-vis a destination might change over time. (12 marks)
9. Kenya's Maasai Mara National Reserve has seen a sharp rise in visitor numbers in recent years. This has unfortunately led to severe negative impacts on Africa's natural environment (Travel Specialist, 2018).
- (a) Explain **FOUR** negative environmental impacts caused by tourism in Africa. (12 marks)
  - (b) Discuss **THREE** possible conservation policies that can help improve conflicts in African nature reserves. (12 marks)