

UNIVERSITY OF MALTA

SECONDARY EDUCATION CERTIFICATE EXAMINATION

ENVIRONMENTAL STUDIES

EXAMINERS' REPORT*

**MATRICULATION AND SECONDARY EDUCATION CERTIFICATE
EXAMINATIONS' BOARD**

***[NOTE: The following is a summary of the examiners' full report.
The original can be consulted at the Matsec Office.]**

**SEC Level Environmental Studies
May 2007 Examination Session Report**

1.0 Summary of Results

Table 1: Distribution of grades for SEC Environmental Studies – May 2007 session

Grade	1	2	3	4	5	6	7	U	Abs	Total
I+IIA	80	260	346	316	208	–	–	133	11	1354
I+IIB	–	–	–	68	330	163	176	320	35	1092
Total	80	260	346	384	538	163	176	453	46	2446
%	3.27	10.63	14.15	15.70	22.00	6.66	7.20	18.52	1.88	100.00

2.0 General Comments

- 2.1** A total of 2446 candidates sat for this examination.
- 2.2** Most of these candidates chose to answer in Maltese. However, some of them failed to express themselves properly in extended writing. Their work lacked clarity and sequential logic. They displayed poor creative writing skills and a poor mastery of vocabulary and conceptual understanding. More sustained efforts need to be done in the teaching and learning process to create opportunities for students to become familiar with scientific jargon and to acquire reflective and investigative skills in the discussion of environmental issues. Sentence construction was at times poor.
- 2.3** Some candidates tend to reproduce by heart previously prepared material on a given topic irrespective of what they were asked for in the question. Thus their answers were partly out of point and they received low marks. This was especially true in question number 6 (Paper IIA) dealing with democracy.
- 2.4** Some candidates answered a theme in two different languages. There should be more guidance about this issue. Furthermore in Paper II (both IIA and II B) some candidates only answered three questions from the whole paper or one question from each section. This betrays the fact that they did not read the instructions.
- 2.5** Many candidates attempting Paper IIB were rather weak and were not really prepared for the examination.
- 2.6** The handwriting of some candidates left much to be desired.
- 2.7** Some of the candidates even failed to hand in their project thus losing 15% of the total marks.

3.0 Paper 1

Question 1: Most of the candidates knew that the increase in the amount of UV light that reaches the surface of the earth is being caused by ozone depletion in the stratosphere. However, some of them failed to link the ozone layer with the cause of its depletion, that is CFC. They confused this gas with greenhouse gases mainly carbon dioxide. They incorrectly mentioned Carbon Dioxide as being a cause of this damage, when carbon dioxide emissions are in fact the main cause of global warming. When dealing with the industrial use of this chemical (e.g. CFC), most candidates did well but some were vague or inexact, e.g. mentioning ‘use in perfumes’.

- Question 2:** a. Most candidates provided the correct answers although some candidates confused this with mechanical weathering in general without giving the specific definition of frost shattering. In some cases candidates also made reference to onion skin weathering.
- b. Although most candidates did mention the whole process and that this type of weathering is mainly caused by acid rain, some candidates mentioned that this type of weathering is caused by a mixture of chemicals in the air without giving further information about what happens after.
- c. Most candidates provided the correct answer i.e. biological weathering is caused by plant roots and burrowing animals. In some cases candidates just mentioned one of the two causes only.

Question 3: Most candidates provided the correct answer though there were many candidates who failed to define both correctly and to show the difference between them. Many seem to mix up non-irrigated land with fallow or abandoned land or even garigue. There were even some who inverted the definition providing a correct definition for the wrong term. Others failed to explain the difference between the two and instead listed the crops which are grown in the fields.

Question 4: A good number of candidates gave wrong examples since they gave various examples of man-made structures instead of coastal landforms. They provided names of caves definitely away from the coast. Better examples of cliff retreat were given even though the citing of particular cliffs was not a definite proof that the candidates understood the term 'cliff retreat'.

Question 5: A large number of candidates found it difficult to explain that plants are called producers since, through the process of photosynthesis, plants produce food which is then passed on through the food chain. Many candidates just mentioned part of the whole answer without mentioning the actual terminology for the process (i.e. photosynthesis).

Question 6: Many candidates gave good examples of imported alien plant or species. However, some candidates ignored the word 'local' and referred to cases from different world regions. There were candidates who referred simply to examples of endemic species but were then unable to explain correctly how these are being actually threatened. Some were on the right track and were partially correct: e.g. they referred presumably to the prickly pear by mentioning the invasive nature of "the cactus" utilised by many Maltese farmers as land enclosures, easier to obtain than building rubble walls. Strangely there were few references to the alarming nation-wide damage which the castor-oil plant is currently provoking all over the Maltese islands. Some candidates gave rather complicated answers thus highlighting the importance of being guided with easier and more straight-forward examples.

Question 7: Some answers were terse or superficial and just mentioned the destruction of fish and birds. These mostly concentrated on the sea water environment and failed to make any reference to the flora and the fauna of the sea bottom or to the negative effects on the coast. Some candidates mixed up the causes and effects of eutrophication with effects caused by oil-spills. However, most students provided very good knowledge about various impacts resulting from an oil spill.

Question 8: Although most of the candidates provided the proper benefit of crop-rotation, some candidates just explained that crop rotation leaves the soil fertile without describing that this is caused by the replenishment of nutrients within the soil. There were also some candidates who wrongly linked crop rotation with irrigation or fertilising.

Question 9: The great majority of the students provided the right answers to this question with a large number of them providing an explanation of the impacts on the environment resulting from the application of fertilisers and pesticides. This clearly showed that they were capable of distinguishing between the two.

Question 10: Most candidates gave proper suggestions of different ways in which disused quarries can be rehabilitated. Some candidates referred to the possibility of re-using exhausted quarries as landfills but then failed to mention that in doing so the authorities concerned need to protect the water table by refilling the place with inert matter or take precautionary measures. Others mentioned that the disused quarries can be filled directly with soil and reused for agricultural purposes. Others saw the colourful possibility of using these unused spaces for housing or commercial outlet projects, while some mentioned that these quarries can be transformed into bring-in sites for the separation of waste. Some candidates however, suggested examples which do not incur sustainability. Transforming a disused quarry into a museum such as the Limestone Heritage is not ideal due to the fact that one can't transform all disused quarries into museums. Some candidates also mentioned that disused quarries can be used for water sports. Many suggestions were however creative though too idealistic. Educators should guide candidates to be more realistic.

Question 11: Most of the candidates managed to answer the first part of this question adequately and gave a fairly good account of the importance of the Keenan Report on the Maltese Education System. However more difficulties were encountered in the second part of the question where some candidates showed that they didn't know enough about the languages used in Malta during the 19th century.

Question 12: Some candidates answered this question well. However, a large number of candidates lacked knowledge about the Lazzaretto, Bighi Hospital and Mtarfa Hospital. Most failed to achieve full marks in this question losing marks in parts (b) (c) and (d).

Question 13: Achievement in this question by the candidates was very good. They generally chose the right projects from the given list.

Question 14: A good percentage of the candidates answered this question well. Most of the candidates who failed to obtain full marks in this question got part (a) of the question wrong as they failed to mention that the mentioned towns were all fortified and developed during the Order's rule. Some candidates didn't make a clear distinction between the towns mentioned in part (a) and part (b) of the question. In fact they only just said that the given towns are close to the Grand Harbour.

Question 15: Most of the answers were correct and some candidates answered in detail explaining the function of each social group or organisation. The majority who failed to get full marks didn't answer well part (c) of the question and showed that they had no idea about the role of the 'Razzett tal-Ħbiberija'.

Question 16: Candidates explained how the Maltese are changing their lifestyle by going out till very late, changing their hairstyles and following foreign fashion. Some candidates also mentioned secularization. A good number of candidates said that the Maltese are becoming influenced by foreigners since Malta joined E.U. and due to internet, satellite and cable T.V and the tourist industry.

Question 17: A good number of candidates scored one mark for this question. Most students mentioned that nowadays the Maltese language contains a good number of words coming from English and Italian but failed to mention the fact that during the 20th century the Maltese language adopted an official alphabet and grammatical structure.

Question 18: Although a substantial number of candidates scored full marks, this question proved to be difficult to many candidates and revealed that they lack knowledge about important historical sites. Many students had no idea about (a) Borg in-Nadur, (c) the Alhambra and (d) the Ħal Millieri Chapel.

Question 19: Achievement by candidates in this question was good. However there were some candidates who erroneously confused it with social stratification. Others just concentrated on industry or tourism or on different types of the economy. A few candidates also considered the shipbuilding and construction industries as being manufacturing industries.

Question 20: Many candidates did well in this question though in part (b) some candidates just limited themselves to offices and banks. Some candidates tied up their answers to the environment considering industrial zones as zones of pollution and recreation parks as places where workers have their break during work.

Question 21: Though there were some good answers many candidates failed to give a clear answer of what social environment means. In their answers many candidates implied that the essential element is social interaction. Some candidates went out of point since they concentrated on the environment and thus dealt with man's duty to protect it.

Question 22: Most candidates limited their answers to emigration from poor countries to rich ones or on the plight of refugees. Little reference was made to tourism or to student and worker mobility. Candidates generally explained how emigrants bring in their culture and create subcultures in the adopted countries thus creating a multicultural society. Though a good number of the candidates dealt with the conflicts that might arise, only a few of them emphasised the respect for diversity.

Question 23: Though many candidates explained the meaning of social environment and centres of recreation, few of them explained the relationship between them. Only a few candidates explained how leisure centres could be an occasion for social interaction and the development of personal talents.

Question 24: Many candidates explained the difference between parliamentary and participative democracy though only a few referred to the important element of voting in elections. Some candidates showed that they do not know what functions parliament really has.

Question 25: Many candidates answered this question well. However there were some candidates who explained what a pressure group is without making any reference to the environmental aspect. A few others erroneously mentioned a political party as an example of a pressure group.

Question 26: Many candidates defined constitution and self-government well. However greater difficulties were encountered in explaining community development and some candidates said that this meant an increase in population or buildings.

Question 27: Candidates generally scored good marks in the first two parts of the question. However major difficulties were encountered by some candidates in the third part of the question dealing with institutions which can best protect civil rights.

Question 28: Most of the candidates answered this question well. They were quite aware of the work of Local Councils and their rights as citizens, giving good examples of how they can exercise their democratic rights at the local level.

4.0 Paper IIA

Question 1: This question was a common choice with candidates. Most of them mentioned the main natural environments present in the Maltese islands. They were able to explain how woodland is characterised by Holm Oak and Pine; maquis is a dense, evergreen shrub community where the individual shrubs reach a height of between 1m and 3m; garigue is a community of low (less than 1m) scattered, often spiny and aromatic shrubs with a herbaceous undergrowth and steppic grassland is a treeless grassland which is widespread and results from degradation of the maquis and garigue, mainly due to grazing. However, fewer candidates mentioned examples of plants and trees that can exist in each of the environments. Some candidates included a suitable diagram. Generally, they pointed out the importance of conservation of the different ecosystems. Very few candidates mentioned how each ecosystem is related to the other through the process of succession. Only a few candidates mentioned human impact on the natural environment and pointed out some local examples.

Question 2: A good number of candidates attempted this question. Some candidates confused global warming and ozone depletion and seemed to use the two terms interchangeably. Few candidates provided the actual chemistry of global warming showing a good grasp of the scientific concepts involved. Some candidates mentioned examples of air pollution caused by fossil fuels such as acid rain. Candidates generally discussed the advantages of fossil fuels (readily available and cheap, technology using them is well developed) and disadvantages (pollution, quarries leave gaping holes in the environment, acid rain, global warming).

Most candidates also mentioned various alternatives that can be used - including: wind power, hydropower, solar energy, nuclear energy, biomass energy, geothermal energy. These alternatives were also discussed and termed as being less polluting than fossil fuels. Only few candidates discussed the best option for the Maltese environment: solar power or wind power. Some candidates correctly provided relevant diagrams and went into great detail about some of them. Others mentioned measures included the importance of legislation. Fewer candidates mentioned the importance of research into cleaner technology.

Question 3: Candidates generally managed to achieve good marks in this question. They produced clear, relevant ideas and arguments and presented them in a coherent and chronological framework. Unfortunately some apparently good answers stopped their account in 1900, thus losing marks. Many candidates gave more space to discuss 19th century developments in education and literally 'squeezed' 20th century developments in just one concluding paragraph. Almost all candidates mentioned and explained the impact of the Language Question on Malta's educational development. On the other hand, few candidates linked the introduction of compulsory education with the equally important issues of post-war mass emigration and economic diversification, in view of the British rundown and the imminent political independence of Malta. Some candidates lost marks since they discussed in detail the Language Question but then left out other important developments in education, namely the Royal Commission Reports, the contribution of various Directors of Education, the gradual improvements in schools and teaching, and the laws on compulsory attendance.

Question 4: Most candidates scored low marks in this question. They showed shallow knowledge and at times even complete ignorance of some of the important features of the ancient Roman civilization. In some cases candidates mixed up 'Roman' with 'Renaissance' and 'Baroque' times. Thus their answer was totally out of point. There were many candidates who did not mention and describe important Roman remains in Italy and in other Mediterranean countries. Those who based their answers on remains found in Malta only lost half the marks. Most candidates chose to write on two or three Roman remains and then omitted other aspects of human progress in Roman times e.g. Roman roads, the arch, aqueducts, arched bridges, the dome, triumphal arches, mosaic art, sculptured marble relieves, statues and busts. It seems that teachers tend to focus more on Roman remains in Malta without giving any importance to the Roman civilization in the Mediterranean.

Question 5: Most candidates concentrated on the physical environment and on the need of a clean environment in their answers. They emphasised the need for a work environment which is free of any hazards and in conformity with the existing

health and safety regulations. Few gave any importance to the human environment especially industrial relations, the role of trade unions and the social environment among workers. Candidates were generally conscious of the link between the work environment and the economy. Only a few candidates supplied examples from the Maltese context or referred to the large number of accidents at the work place. A few candidates were just out of point since they just described the various sectors of the economy.

Question 6: Most candidates answered this question well and mentioned the most important points as expected. However, they gave few political examples with the notable exception of Nazism. Some candidates expressed the view that a monarchy cannot be democratic, thus betraying their idea that monarchy can only be totalitarian as in the past.

5.0 Paper IIB

Question 1: Though this question was a common choice, few candidates were able to correctly answer all the parts of the question. Most candidates did not understand maquis environment. Many were able to explain how woodland is characterised by Holm Oak and Pine. Candidates had problems in distinguishing between maquis, garigue and steppe. Few candidates included diagrams to illustrate their explanations. Few candidates made connections between the various ecosystems.

Question 2: Some candidates were able to answer the questions well but the majority found difficulties in answering parts a and c of the question. Few candidates were able to correctly describe fossil fuels as energy compounds formed through heat and pressure from microscopic organisms over millions of years. Most candidates correctly answered question b giving oil, coal and gas as suitable examples. Some candidates however, only provided the word pollution as an answer. The majority of candidates were able to correctly name alternatives to fossil fuels e.g. wind power, hydropower, solar energy. However, few mentioned biomass energy and geothermal energy. Very few candidates gave a short description of these energy alternatives.

Question 3: Most candidates answering this question started with a brief but relevant introduction of the state of education in Malta at the time of the British takeover. In part (a) of the question candidates scored an average of 4 marks out of 6. They generally discussed in some detail the findings and suggestions of the Royal Commissions of 1836 and 1878. In part (b) candidates gave less convincing answers with the average mark being 3 out of 6. Answers generally lacked clear ideas about the contribution of the various religious orders and individual clergymen to the development of education in Malta. Only a few candidates who mentioned the opening of church schools bothered to give examples and link them to the respective religious order. Candidates produced better answers for part (c), obtaining an average 5 out of 8 marks. Candidates mentioned and explained the implications of the education acts of 1946, 1970 and 1974. A considerable number of candidates mentioned the opening of new opportunities with the building of technical schools and a new university. However, some candidates mixed up their ideas, arguments and historical developments.

Question 4: Although the question was presented as a whole statement, it focused on three parts namely art, architecture and civil and military engineering. The intention was to guide candidates focus upon and apply acquired knowledge to the different components of the question. Most candidates failed to obtain even half of the allocated marks. They failed to mention and describe the main features of well-known Roman remains e.g. the Colosseum, the Pantheon, the Roman Forum. Most candidates opted to answer the question as an essay. However, no effort was made to write the answer in some form of acceptable logical structure. Many candidates mentioned only Roman remains found in Malta and omitted other important examples found in Italy and around the Mediterranean. Most answers were very short, shallow in knowledge and even having the wrong data e.g. including the Parthenon, the Acropolis, Athens and the Alhambra as Roman remains. A considerable number of candidates seemed to have misunderstood the question and wrote on Malta's prehistoric, medieval and hospitaller artistic and architectural heritage. Thus their essay was out of point.

Question 5: a. Only a minority of candidates who answered this question managed to give a good account of what sustainable development is. Many just explained what a development is with a few candidates also giving a definition which is opposite in meaning, namely a development which ruins the environment. It was quite obvious that a good number of candidates just studied a model essay dealing with the respect to the environment and reproduced it without trying to adopt it to the given question.

b. Most candidates failed to answer this part of the question well and just repeated what they had written in the first part of the question in other words. Many dealt with how we should respect the environment emphasising the three R's. Few candidates gave any examples of sustainable development in Malta. The most common example given was how the Maghtab Refuse Centre is being tapped as an energy producing centre.

Question 6: a. Most of the candidates choosing this question understood what was expected of them. The most common examples given were the rights for work, education, shelter, liberty of speech, equality and the vote. However some candidates betrayed some ignorance of the distinction between the rights embedded in the Maltese Constitution and the fundamental human rights of man. Some of the candidates wrote at length to answer this part of the question which just carried 6 marks but were much shorter when answering the second part of the question which carried 14 marks.

b. Most candidates failed to go into detail when answering this second part of this question. Though they explained what democracy is they failed to give practical democratic examples from the life of a nation. The most common examples given were free elections, political parties' participation, liberty of speech and choice and citizen equality. Some candidates even wrote about the duties of citizens instead of their rights.

6.0 The school-based assessment (The Project)

6.1 The moderators reviewed a cross section of the projects in some schools. The examining panel also corrected the projects presented by private candidates. Generally the level of work presented was good.

6.2 Relevance of content was, in most cases, consistent with the title, although some projects manifested a noticeable discrepancy between the title name and the actual content. Furthermore some projects lacked originality and were not focused on a specific topic but were of a very general nature.

6.3 Projects generally included material from the internet, illustrations taken from secondary sources, photographs taken on site, surveys and interviews. Projects should be more based on primary sources, e.g. questionnaires, fieldwork, investigative material, photographs, etc. Some candidates attempted to organise a survey through a questionnaire but many of these were rather rhetorical with foregone responses.

6.4 Most projects lacked a synopsis at the beginning and conclusions reached at the end were in most cases very short and superficial with no real attempt to make suggestions and provide personal opinions. Some projects were descriptive in nature with most of the material downloaded from internet sites. Others were merely a collection of information with little or no attempt at analysis. Personal ideas were conspicuously absent.

6.5 Projects which had to focus on the restoration of an historical site tended to discuss in great detail the history and description of the site. They only had a brief and rather superficial commentary upon the restoration works undertaken.

6.6 There were many projects which were just excellent in presentation with an appropriate title, table of contents, subdivisions in chapters, consistency in format, pagination, use of a variety of sources, a bibliography or an acknowledgement of sources at the end. However there were others which were done rather haphazardly, e.g. lacking table of contents, captions to pictures, etc. Furthermore the inclusion of a lot of photocopies of whole articles is not conducive to winning marks since the originality of the project suffers. Copying whole chunks from a secondary source should be avoided.

6.7 Some candidates seem to lean on adult support to complete their work. Furthermore one cannot help suspecting that some projects are being re-cycled from year to year.

**The Chairperson
Board of Examiners
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