Part 1: Statistical Information
The distributions of grades awarded in the May 2013 session are given in the table below.

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<th>GRADE</th>
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<th>C</th>
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Part 2: Comments regarding candidate’s performance

School-based Coursework

Food task:

There was a variety of food tasks investigative work in all schools. Most candidates did good work. It is suggested that candidates should be pushed into analyse the results more scientifically rather than reporting the findings and keep it at that. For example if comparing types of flour in bread-making candidates should be encouraged to compare not only the aesthetic and the texture parts only but go into the fermentation process and indicate the results for the release of carbon dioxide, or how the amount of gluten in the four effects the bread etc. This would give the experiment an added value for this level. On the other hand, unfortunately there were candidates who carried out food tasks which are investigated at SEC standard.

Evaluations in food tasks also need to be more on going and reflective suggesting improvements, where necessary.

Investigative Task:

All schools had a good array of investigative topics. Most candidates showed that they reached the expected level in this subject. Most candidates were able to come up with analytical and problem-solving skills.

Though most candidates in all schools were able to reach the expected level, it could be evidenced that the level of standard varies from one school to another. In one particular school, it could be clearly seen that though students were pushed by their supervisors to produce better work, the final investigation still lacked when compared to the other schools. Candidates in this particular school did not manage to analyse and discuss most of the data collected through the investigative technique so conclusions drawn were poor and vague. On the other hand, these candidates made up for this pitfall by producing on going and very reflective evaluations. This shows that their supervisors pushed their students into reflecting on their work more and suggesting improvements.

It could be seen that candidates from the other schools produced better work, in fact most got better marks, however there were a good amount of students who did not evaluate their work well. In fact in one of these schools, evaluations were mostly built around structured points or subtitles where candidates commented on these points.
Private Candidates’ Coursework

There was a variety of titles of projects and food tasks all very interesting however there was a great difference of level of work on these projects and tasks. In addition to what is being said above, it can be clearly observed that some students were given a very good guidance whereby students could satisfy the criteria very well. On the other hand some students struggled to attain at least a pass mark on the whole coursework. It is also noted that some supervisors greatly overrated the students’ work consequently putting their students at a disadvantage when their work was compared with other private candidates during the moderation exercise. This can be mostly noted in candidates’ work supervised by teachers who do not primarily teach AM level. It is suggested that teachers who decide to take on this role should consult with AM level teachers and familiarise themselves more with the AM syllabus in order to help their students more.

It is very important that supervisors of private candidates keep abreast with the criteria set by the syllabus whilst guiding their students to attain the best possible results which the students deserve. One should not underestimate students’ potential and it is up to their supervisors to coach them into working hard and helping them to develop problem solving skills in order to complete the coursework successfully.

General Overview of Paper 1

The mean mark per question for paper 1 for this session was 9 where this shows that unfortunately a good percentage of candidates failed to show a basic knowledge of this part of the subject since pass mark for each question is set at 10 marks. In paper 1 candidates need to apply most of the knowledge they acquire during the scholastic years to different situations presented to them, something which most of them failed to do. Most candidates stuck to brief and general answers, combining questions and answering them all at one go within the parameters of a brief paragraph or a short list of points. It was noted that a good number of candidates stuck to the short notes compiled by their lecturers for revision purposes or to be used as guidelines to build their knowledge and studied these by rote memory. It was evidenced clearly from repetitive answers markers corrected over and over again that few candidates used these notes to delve more into the subject and increase their knowledge to the expected level.

It was also observed that though minimum marks for all questions ranged between 0.5 and 2 with the exception of question 2 where the minimum mark scored was 5, maximum marks obtained by the candidates were as high as 18 and 19 with the exception of questions 2 and 5 where maximum marks scored were 14 and 10 respectively. Notwithstanding the fact that there were candidates who severely lacked the knowledge, there were other candidates who performed outstandingly and so successfully reached the desired level set for the 2013 AM Home Economics and Human Ecology syllabus.

It is very important for candidates to keep abreast to current local and global situations which are related to topics in the said syllabus. Topics such as environment issues, budgeting, financial and investment plans since these seem to be the pitfall for a good number of candidates as they fail to increase their knowledge enough to succeed in questions related to this area of the syllabus.
Paper 1
Question 1
Number of candidates who answered this question: 104
Minimum mark attained: 0.5
Maximum mark attained: 14
Mean mark: 6

i) Describing three different types of bank accounts available locally
The majority of the candidates only wrote down the names of the bank accounts available locally but did not give out a description of each account.

Advantages and disadvantages of each account.
Most candidates gave correct answers regarding the advantages and disadvantages of each bank account showing that they are aware of the differences between the 3 different bank accounts.

ii) Explaining how the chip and pin debit card facility works.
A lot of candidates showed lack of knowledge in this question when stating the chip and pin works by entering the pin to access the card from an ATM. Very few students mentioned that the card works by being swapped into the Chip and Pin terminal, amount of money added and the cardholder is to enter the pin, instead of signing his signature.

The advantages of this card for the bachelor.
The most common answers in this question were that he does not need to carry money with him and he can buy from shops. While these answers are correct it is important to note that there are lots of other advantages for using this card, mainly, to deposit money at ATM, request statements and balance enquiries, request chequebooks, pay bills and transfer of funds as well.

Precaution the bachelor needs to follow when owning a debit card.
Many candidates answered this part of the question correctly. Again, most candidates gave the same answers mainly mentioning things like signing the card when you receive it, not allowing anyone else to use the card and not writing the pin on the card. Other relevant answers would have been to check if the right amount of money is entered when you pay with the card, not placing it near a magnetic strip and to block the card immediately if it’s lost or misplaced.

iii) Difference between Life Assurance and Life Insurance
A lot of the candidates gave a very poor definition of the two. There were quite a number of students who just wrote “just in case” as a definition of Life Insurance and “something that is sure going to happen” as a definition of Life Assurance. There were quite a good number of students who focused on home or car insurance rather than Life Insurance.

Benefits when investing in Life Assurance policy.
Because a lot of students did not know the definition of Life Assurance, most did not know the benefits of having such as an assurance.

iv) Explaining mixed portfolios, mutual funds, shares and bonds.
While there were a good number of students who knew what a mixed portfolio is, the most common answer was that it’s a file where one can store papers related to bank accounts and investments. Almost none of the students who chose this question knew what mutual funds were. With regards to
shares most knew what shares were but most students said that bonds were when you lend money to the government.

Advantages and disadvantages of shares and retirement plan.
Most of the marks lost in this question were due to the fact that most of the candidates answered this question very vaguely by writing down advantages and disadvantages of saving and not separately of having shares AND a retirement plan.

Question 2
Number of candidates who answered this question: 152
Minimum mark attained: 5
Maximum mark attained: 18
Mean Mark: 12

i) Definition of Social Housing
A good number of students did outline that social housing is housing that is let to people with housing needs, at low rents. Despite this, many candidates focused on social housing as a service exclusively for disabled persons, while many others gave the definition of residential care homes. A small number of students referred to social housing as a service that helps people to find a home that is suitable to their needs. Moreover, a common misunderstanding was that the property is given by the state rather than lent at low rental fees.

Purposes of social housing
Amongst the candidates who answered the previous question correctly, some outlined that the purpose of social housing is to exclude poverty and social exclusion. However, the majority of the candidates left out this question and instead they gave a very brief overview of social housing in the previous question. This indicates that candidates ought to understand better how marks are allotted and answer accordingly.

ii) Factors that have contributed to higher housing costs in Malta
The most common factor that surfaced amongst candidates’ answers was that Malta is overpopulated so since there is not enough land, the few plots available are very costly. Another common answer was that dwellings are becoming more luxurious so the cost is inevitably higher. Other answers included that property owners want to make more profit to make up for the higher standard of living.

Despite that the above answers hold true, very few candidates pointed out the crux of the matter, that is, the increase in the cost of development application permits and higher costs of house construction materials.

Some candidates answered that nowadays builders are not as skilful as before so the few skilful builders require a higher pay. This answer was undoubtedly incorrect.

Action the state is taking to assist first time household buyers
Answers to this question were exceptionally insufficient and too general. Candidates showed a lack of understanding in current measures taken by the state to assist first time household buyers. The majority referred to actions not related to the state, such as borrowing money from relatives and resorting to groups of people that might help. A good number of candidates stated that banks offer lower interest rates to first time buyers. They did not however indicate that the government offers a subsidy of 2.5% on bank loans on a maximum loan value of €150,000.

iii) **Housing requirements the couple should consider to minimise their mobility difficulties.**
Almost the full majority of candidates pointed out feasible, correct considerations to this question. The few incorrect answers were suggestions that do not entail requirements to the structure and layout of the house, such as buying a bath mat to help the person not to slip and avoiding things lying around so as to help the wheel-chair bound person to pass freely.

iv)**Electronic and non-electronic security systems**
Most of the answers that featured in this question were correct and a few candidates also mentioned the latest electronic security systems such as finger print recognition. A good number of students, however, lacked in using the proper terminology for particular systems, such as, “telephone with camera” instead of video door phone system. Moreover, the question asked the candidates to describe such systems and unfortunately many candidates just listed them.

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**Question 3**

Number of candidates who answered this question: 159
Minimum mark attained: 3
Maximum mark attained: 18
Mean Mark: 10

i) **Two benefits of working beyond retirement age for nurse and the nation**
Almost all the candidates who answered this question wrote valid answers.

ii) **Use of professional expertise within family and community**
Like with the previous question a lot of candidates got this part of the question right. There were quite a good number of candidates though who wrote that the elderly man should do first aid courses to different people in the community. Although being a nurse, and he knows first aid procedure; this obviously doesn’t make him eligible for teaching first aid.

iii) **Outlining new personal skills provided by the state and non-governmental organisations.**
The majority of the candidates just wrote down names of organisations but did not give information or explain the role of the organisation as was expected of them. While with the non-state, good examples were given such as University of third age and local councils, a lot of candidates lost marks because they did not know any non-governmental organisation that the nurse join to learn new skill. Most of the students who tried this question wrote down the church.

iv) **Elderly abuses, giving specific example.**
Most of the candidates gave correct name of abuses mainly physical, sexual, emotional and social abuse and gave relevant example how these types of abuses can happen.
Outlining causes of abuse and action to be taken.
Only a handful of candidates mentioned the causes of abuse on the elderly and the action to be taken to stop this abuse. The great majority left this part of the question unanswered.

Question 4
Number of candidates who answered this question: 146
Minimum mark attained: 1
Maximum mark attained: 18
Mean Mark: 10

i) Explanation of statement
The given statement about equal human rights to all human beings was generally defined correctly. Some candidates also added that it was John F. Kennedy who proclaimed the Bill of Rights.

ii) Listing with justification of two human rights and two responsibilities
Amongst the several possible answers, the most common correct answers were a right to live, a right to education and a right to expression. A small number of students listed and explained consumer rights and responsibilities rather than human rights and responsibilities. Moreover, justifications were rarely given. It should be emphasised that human rights are much more than “doing what you want”, as some candidates explained.

iii) Benefits/allowances to single parents and unemployed people with explanations why these are important
Responses to this question were very poor. With regard to allowances to single parents, the majority made reference to children’s allowance, however, this allowance is not solely for single parents and such answers were not justified. Most of the answers were too brief and inadequate, without a solid explanation to back them up. In fact, a common answer was that the state gives money to single parents.

When mentioning allowances to unemployed people, the majority mentioned ETC, despite that it is a service, not an allowance. None of the candidates pointed out unemployed benefits or special unemployment benefits.

Services and/or other assistance and explanations why these are important
With respect to services/assistance offered to single parents, very few candidates mentioned that single parents can qualify for reduced tax rates. The majority however, mentioned very briefly that such parents may be entitled to a particular housing scheme. The scheme, however, was not explained. Moreover, many candidates did not answer this part of the question. Likewise happened when attempting to state and explain services or assistance to unemployed people. Almost the full majority of candidates left out this part of the question, mainly because they had already mentioned ETC as an allowance. Amongst those who did mention ETC, the majority gave a general overview of this entity and failed to mention the benefits to the person/s making use of this service.

The main pitfall to this question was that many candidates did not read the question well and answer in point form to ensure that they listed ALL the expected answers. On the contrary, most of the
candidates wrote a paragraph in which they focused on one or two particular allowances/services such as ETC, without distinguishing which are benefits/allowances and which are services/assistance.

Ultimately, it is necessary to point out that some students unintentionally use discriminating words such as “normal families” when compared to single parent families. When referring to a single parent, reference was ALWAYS towards a female and when referring to an unemployed person, most of the time, reference was always towards a male. It is to be emphasised that such ingrained, unintentional discrimination is to be pointed during lessons, corrected and never to be used.

**Explanation of abbreviation ETC and its role**
A good number of students gave the correct answer to the abbreviation ETC, however, several other versions also emerged, such as “Education Teaching Courses”, “Employment Tribunal Company and much more. Regarding the role of this body, most answers were well explained.

iv) **Explaining “lifelong education”**
Only a small number of candidates explained this term really well. Many candidates assumed that it is when you work and study at the same time. Despite that it may hold true, they did not explain the importance of lifelong education or why people opt to continue studying. Amongst some of the incorrect answers, some candidates described this term as the schooling that begins at Primary level and ends at Tertiary level.

**Advantages with reasons for lifelong education**
The majority of candidates highlighted good advantages with sound reasoning. It should be made clear however, that lifelong education courses are not solely for people who did not complete secondary education or for “ignorant” people to get a second chance in education, as some students pointed out.

**Disadvantages with reasons for lifelong education**
Contrary to the advantages, the disadvantages were particularly poor and most of the reasons given were highly discriminating towards elderly people. These include that the elderly might be forgetful and therefore not succeed in lifelong education courses, that they would be excluded if they are in a course amongst young adults and that since they are more knowledgeable and computer literate, they keep on working, providing less job opportunities to younger generations.

**Two provisions for lifelong education by local government and authorities**
A number of students answered tertiary education at the University of Malta and computer courses held by local councils. Such answers are correct yet they are too short and general despite that the question specifically asked to describe two provisions.
Question 5
Number of candidates who answered this question: 1
Minimum mark attained: 10
Maximum mark attained: 6
Mean Mark: 151

i) Scientific principles in greenhouse effect leading to global warming.
The candidates were very brief and showed lack of knowledge when answering this question. A lot of students opted to leave this part of the question unanswered while those who tried to answer only wrote that heat is trapped in the world atmosphere, rising the temperature of the earth. More scientific detail is obviously expected of them at this level of studies.

Listing two gases which contribute to global warming giving a source of each
A lot of candidates answered part of this question correctly. A common answer was Carbon dioxide though a lot of them did not know or got the other gas wrong.

ii) Three impacts of greenhouse effect and global warming on the world.
Most candidates got marks for this question when they mentioned relevant answers with regards to impact of greenhouse effect and global warming on the earth. The most common answers given were increase in temperature, rise in sea level and decrease food supply. None of the candidates mentioned land desertification and increase in volcano activity.

iii) Illustrating three strategies on a national level and 3 strategies on an international level which can be adopted to deal with these issues:
With regard to the national levels, the candidates showed relevant and correct answers. The same cannot be said for the international levels. Only one candidate got one of the Protocols right.

iv) Defining environmental assessment impact
Very few candidates knew what the environmental assessment impact is. Most candidates gave general answer, that it’s an assessment about the impact of the environment.

Highlighting its function
Not surprisingly, because they did not know the definition, most of the candidates did not know the function of the environment impact assessment.

v) Energy saving scheme offered by local government
Most of the candidates gave correct, relevant answer for this question. Almost all of them mentioned the solar water heater grant and the PV grant. None of the candidates mentioned the Plug in Vehicles or the Roof thermal and double glazing scheme.

vi) Four air pollutants generated from homes
The candidates were quite informed about the pollutants generated. Common pollutants such as tobacco smoke, fireplaces, car exhaust, pesticides, air conditions and deodorant were mentioned in this question.
Question 6
Number of candidates who answered this question: 2
Minimum mark attained: 19
Maximum mark attained: 8
Mean Mark: 113

i) Definition of plastic money, credit facilities and e-banking services including examples of each
Most candidates showed a good understanding of plastic money, some confused credit facilities with cash and unfortunately the majority described e-banking as solely online shopping.

ii) Basic features and functions of E.P.O.S. and barcodes in retailing
Many candidates outlined correct basic features and functions of E.P.O.S and barcodes and also gave reasonable and justified benefits for the retailers and consumers. Nonetheless, a small number of students confused E.P.O.S with A.T.M and did not describe the term barcode but just wrote its advantages.

iii) Account for the increase in the use of credit facilities in Malta and outlining two advantages and two disadvantages of using credit for the consumer
A high percentage of students left out the first part of this question and skipped to the advantages and disadvantages, proving that questions ought to be read more carefully. On the other hand, a good number of candidates stated correct advantages and disadvantages of credit facilities for consumers. Candidates, who failed to define credit facilities in 6i, inevitably gave incorrect answers to this question.

iv) The danger of illegal credit systems
Candidates did well in this question. A good number of them pointed out the term “loan sharks” and defined it correctly. A small number of students, however, referred to the use of credit cards as illegal.

Help available locally for individual victims of this abusive system
The most popular question was Caritas. Since the question requested an explanation of the help provided, students were expected to mention the unit within Caritas that offers such help – the Foundation for Victims of Usury. None of the candidates mentioned this unit.

General Overview of Paper 2

The mean mark per question for this paper is 10. This means that though most of the students showed a basic knowledge of this field of study, unfortunately most of the students failed to show any evidence that they continued building their knowledge of such topics upon the knowledge learnt within the Home Economics discipline at the Secondary Education Certificate (SEC) level. Moreover the work presented shows that most students did not attempt to extend and consolidate this knowledge base by integrating the essential principles of this field of study as stated in the AM Syllabus Home Economics and Human Ecology 2013.

One of the most common mistakes that was evidenced by markers was that candidates did not read the whole question so most of the answers given were either incomplete or else irrelevant. This was evidenced in answers where questions asked for a number of e.g. dis/advantages or reasons for each of a situation/object. Here, candidates wrote a paragraph of irrelevant information or else just wrote for example one dis/advantage or reason for the situations as a whole. In addition a very large percentage of candidates did not differentiate between the words “explain”, “define”, “describe” and “justify”. The majority of the candidates either amalgamated all these by giving a general and vague answer or simply skipped this part of the question.
Another point worth highlighting is that markers found it extremely difficult to mark answers as candidates did not present neat and organised work. The large majority of these candidates failed to mark the beginning or the end of each section of the question or even worse did not write any question numbers leaving it up to the markers to guess which question or which part of the question the candidate is trying to answer. Answers to questions which required candidates to list points were presented in paragraphs or chunks of haphazard information where some answers started on a particular page and continued four or five pages after where there happened to be some space left or when the candidate happened to remember something else pertaining to that particular question. In addition though there are candidates who presented neat and organised work with good level of English grammar and spelling, some students had a very poor level of English. This made it very difficult for markers to understand what the candidates tried to explain. English used in some of the answer sheets was so bad that some markers could not make heads or tails of what the candidates were trying to say.

In spite of all this there was a small amount of candidates who made the much required leap between the ordinary level and advanced level successfully obtaining high marks in this paper.

**Paper 2**

**Question 1**

Number of candidates who answered this question: 99  
Minimum mark attained: 2  
Maximum mark attained: 15  
Mean mark: 8

i) *Defining triglycerides, phospholipids, sterols:*

Most of the students scored full marks for the definition of triglycerides but failed to answer phospholipids and sterols correctly. A very small percentage got all three terms right.

ii) *Chemical elements:*

In this question only 1 candidate managed to score full marks whilst another scored more than half of the marks. The other candidates failed to any marks in this question. In order to gain full marks, candidates had to mention the acid group and the methyl group however students just mention Carbon, Hydrogen and Oxygen.

*Physical structure of saturated fatty acid and polyunsaturated fatty acid:*

*Chemical and physical structural differences of saturated and polyunsaturated fatty acid:*

More than 90% of the candidates scored full marks for these questions. Candidates were very well conversant with this part of the syllabus.

iii) *Highlighting the difference between TRANS and CIS fatty acids with the aid of diagrams of CIS and TRANS fatty acids:*

A large percentage of candidates scored full marks in this part of the question however some students did not draw the whole chains of CIS and TRANS fatty acids.

iv) *Outlining hydrogenation:*

Most students defined hydrogenation well however some candidates just wrote answers like “turning an unsaturated fatty acid to saturated” or “turning vegetable oil to margarine” or “turning oil to solid state”.

*Advantages and disadvantages of hydrogenation:*

About two-thirds of the candidates scored full marks on this part of the question. The most common mistake was that some candidates gave answers like “margarine becomes more spreadable”.


v) **Digestion of lipids:**

This question proved to be the pitfall for more than 95% of the candidates. It clearly shows that candidates are not conversant at all with this part of the syllabus despite the fact that digestion is thoroughly covered in the SEC syllabus before it is repeated and more detail is added in the ADVANCED level. Candidates failed to give at least the details that they should know from the SEC level. Most gave vague answers and even unrelated terminology, chemicals and body parts and organs.

**Question 2**

Number of candidates who answered this question: 128  
Minimum mark attained: 3  
Maximum mark attained: 18  
Mean mark: 11

i) **Definition and aetiology of hypertension; definition and aetiology of gastroenteritis:**

Many candidates gave a correct definition of hypertension explaining that it is high blood pressure and explained its aetiology. Few students however, gave the actual systolic and diastolic blood pressure readings.

Very few candidates defined correctly gastroenteritis. In fact many confused this medical condition with diverticulitis or a food allergy. Those who answered correctly outlined that it involves the gastrointestinal tract, particularly the stomach, and symptoms include in diarrhoea and vomiting.

ii) **Food items to be eliminated when recuperating from gastroenteritis:**

Many candidates outlined the elimination of dairy products and acidic foods. But a very large number of candidates insisted that the adult worker should avoid foods high in fibre all together.

iii) **Difference of the nutritional needs and daily recommended intakes of the adult manual labourer and a sedentary worker:**

Unfortunately many candidates only highlighted the necessary increase of energy and carbohydrate foods by the manual labourer, without mentioning any other nutrient.

iv) **Plan of a lunch the manual labourer can take with him at his work place:**

Candidates planned healthy lunches for the manual worker, which were laden with carbohydrate foods, such as; pasta, rice, bread, and pastry (for pies). Fruit was also extensively included in the used lunch plan, whilst water and orange juice featured as the most popular beverage.

Some students did not understand the term ‘two-course meal’ and prepared either two menus or a full day’s meal plan for the manual worker.

Some candidates outlined general nutritional factors rather than focusing on the nutritional aspects of the planned lunch menu for example; following the nutrition guidelines, to avoid nutrient deficiencies, and to have a balanced diet.

With regards to outlining of the non-nutritional factors, many candidates did poorly in this part of the question as they took into consideration the preparation of the food, including hygienic conditions and aesthetic aspects, rather than considering factors including the ease of consuming the food, the packing of the food, how to keep food at an appropriate temperature, and transporting the food.

**Question 3**

Number of candidates who answered this question: 165  
Minimum mark attained: 3  
Maximum mark attained: 12  
Mean mark: 7
i) **Justifying the statement:**

Most candidates attempted to explain the statement by rewriting it in their own words without substantiating what is being said. Other candidates wrote some vague answers like "it is important to be healthy" or "we are what we eat".

**Definition and function of dietary guidelines:**

Most candidates found it difficult to define what dietary guidelines are. Most attempted this by giving vague answers like "rules to be healthy". Most candidates did not relate the dietary guidelines with the Maltese people. Unfortunately a great percentage of the candidates refrained from answering the second part of the question.

**Explaining the difference between Food Guides and Dietary Guidelines:**

More than two thirds of the candidates found it difficult to explain the difference between food guides and dietary guidelines. Most did not really know what food guides are so they could not differentiate between them.

ii) **Definition of Food Guide Pyramid:**

Most candidates failed to give a proper definition of a food guide pyramid. Other candidates simply skipped this part and went on to answer the next question.

**Describing and drawing a labelled diagram of the Food Guide Pyramid:**

More than 85% of the students scored full marks for this part of the question. Candidates showed that they are well conversant with the diagram of the Food Guide Pyramid and its description.

**Function of Food Guide Pyramid:**

Most candidates gave a good function for the Food Guide Pyramid however they failed to mention that the pyramid helps in reducing diet related disorders prevalent in Malta.

iii) **Explaining and justifying the following dietary key steps:**

- *Eat a nutritious diet based on a variety of foods originating mainly from plants, rather than animals.*
- *Eat bread, grains, pasta, rice or potatoes several times per day.*
- *Control fat intake (not more than 30% of daily energy) and replace most saturated fats with unsaturated vegetable oils or soft margarines.*
- *Replace fatty meat and meat products with beans, legumes, lentils, fish, poultry or lean meat.*
- *If alcohol is consumed, limit intake to no more than 2 drinks (each containing 10 g of alcohol) per day.*

This part of the question was the pitfall for more than 95% of the candidates. Candidates failed to give specific nutritional facts why these are dietary key steps. Most students just copied the dietary key step all over whilst others either gave a meagre explanation of the each step with justification or else gave irrelevant or out of point answers showing either lack of knowledge or lack of understanding.

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**Question 4**

Number of candidates who answered this question: 163
Minimum mark attained: 2
Maximum mark attained: 20
Mean mark: 13
i) **Difference and aetiology of bone conditions:**

*Specific individual group the condition is most prevalent in:*

Even though many candidates did know what ‘rickets’ is and that the disease is prevalent amongst children, many did not know the difference between osteoporosis and Osteomalacia.

ii) **Dietary factors that delay the development of osteoporosis:**

The most popular dietary factors given for the delay of osteoporosis were consuming calcium rich foods together with Vitamin D rich foods. Good food examples of calcium and Vitamin D rich sources were given. A good number of candidates also outlined the factor to avoid phytate/oxalate/fibre rich foods as these hinder the absorption of calcium.

Most popular non-dietary factors outlined by candidates included: engaging in regular weight-bearing exercise, exposure to sunlight, and taking calcium supplements. No candidate mentioned the intake of estrogen hormones in Hormone Replacement Therapy (HRT) that will retard the onset of osteoporosis and reduce its rate of deterioration.

A good number candidates outlined the bone density test but only a handful of candidates did give the scientific name (DEXA dual-energy x-ray absorptiometry scan) of this test.

iii) **Scientific principles underlying the following statements about calcium:**

a. **Vitamin D helps the absorption of calcium in the body.**

   Many candidates gave the correct answer highlighting that Vitamin D promotes calcium absorption in the gut and assists the mineralization of bone.

b. **The recommended daily allowance of calcium varies according to age.**

   Candidates explained the different RDAs of this mineral gave reason for this. Some mentioned also outline that women in postmenopausal phase require a higher intake of calcium to maintain a high level of calcium in the blood to delay the breakdown of bone structure.

c. **Too much calcium can lead to heart problems.**

   The answers given to this question lacked scientific principles and many outlined that since many calcium rich foods are also high in saturated fats or cholesterol, this fat will lead to heart problems.

   d. **Muscular cramps can be a symptom of low calcium in the body.**

   Here again many candidates did poorly, outlining that since bones will not be strong due to lack of calcium, so the muscles will also be fragile and so will cause cramps. The correct answer is that since low blood levels of calcium directly increase the excitability of both the nerve endings and the muscles they stimulate, this may be a predisposing factor for the spontaneous true cramps experienced by many older adults, as well as for those that are commonly noted during pregnancy.

iv) **The aetiology of lactose intolerance:**

Even though many candidates did outline that lactose intolerance occurs when the small intestine cannot tolerate lactose, many referred to lactose as a milk protein and not as a milk sugar. Only a few candidates referred to the lack of lactase in the small intestine that breaks down, or digest, lactose (the sugar found in dairy products).

**Ensuring an adequate intake of calcium for a lactose intolerant child, outlining the specific food sources the child can consume:**

Many candidates gave correct answers mainly;

- The child may consume yoghurt as the lactose is converted into lactic acid during fermentation.
- Sesame seeds (very high in calcium) can be mixed with a variety of salads, breakfast cereals, dips, sprinkled on pastry, etc…
Green leafy vegetables and broccoli supply a good source of calcium.
Water is also high in water.
Salmon and fish eaten with bones also provide a good supply of calcium.
Soya drinks are good substitutes for milk.
Tofu, tempeh and vegetarian cheese can offer alternatives for cheese.
Consuming calcium sources with Vitamin D rich foods will ensure good absorption of calcium.

However, many just gave three food sources and not six, which meant that they were only allotted half the marks.

**Question 5**
Number of candidates who answered this question: 157
Minimum mark attained: 2
Maximum mark attained: 18
Mean mark: 8

1) **Definition of food preservation:**
Candidates gave correct definitions of food preservation many highlighting that it is a process of treating food to stop or slow down food spoilage, loss of quality, edibility or nutritional value and thus allow for longer food storage or shelf life.

**Describing the effects of preservation of food:**
Many candidates lost marks as they focused on the change in the texture, colour and taste of food and did not outline the actual chemical and physical preservation of food; that is the prevention of the growth of bacteria, fungi (such as yeasts), and other micro-organisms.

**Advantages of food preservation:**
Many candidates outline the extended shelf life, the availability of out of season foodstuffs, availability of various foods even from far away countries, makes transportation of food easier and the change in the taste of food.

2) **Defining and explaining pickling:**
Good definitions and explanations of pickling were given however the scientific principles were lacking.

**Defining and explaining salting:**
Many candidates did well in this question.

**Defining and explaining of irradiation:**
This question was well answered. Many even mentioned the Radura symbol. A number of candidates did not know the process of how food is irradiated.

**Defining and explaining modified atmospheric packaging:**
Many candidates gave a definition related to vacuum packaging but those who answered correctly even mentioned the gases involved, modifying the atmosphere in the packaging to reduce the oxygen (O₂) concentration and increase the carbon dioxide (CO₂) concentration.

3) **Common concerns of food preservation:**
Many candidates did well in this part of the question however some did not give an explanation for the concerns they outlined.
iv) **Describing the importance of freezing as a method of preservation:**
Many answered this section correctly however some candidates did not give the temperature involved in freezing which is not acceptable at this level of study.

**Highlighting freezing techniques in food industry:**
Many candidates did poorly in this question, mentioning home freezing techniques rather than food industrial methods. Those who did mention some appropriate industrial freezing methods mainly mentioned; freeze-drying, air blast freezing, immersion freezing and belt freezing. Only two students mentioned cryogenic freezing and liquid nitrogen freezing.

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**Question 6**
Number of candidates who answered this question: 116
Minimum mark attained: 5
Maximum mark attained: 19
Mean mark: 13

i) **Main steps in the production of white polished rice, outlining the scientific principles involved that will deteriorate the nutritional value of the grain:**
In this question, the candidates did not perform well due to the fact that they did not use the appropriate terminology for the rice milling process and the nutritional deterioration that occurs for each stage was lacking. The candidates mainly mentioned the removal of the outer layer of rice (many referred to it as the bran) which is high in fibre. Some candidates also mentioned the reduction of Vitamin E and some minerals.

ii) **Diet-related conditions that can be prevented by consuming unrefined brown rice:**
Many candidates did well in this question highlighting the following diet related diseases: obesity, hypertension, Diabetes Mellitus Type II, diverticulitis, haemorrhoids, cancer of the colon and high cholesterol level. Only a few candidates outlined vitamin and mineral deficiencies such as: anaemia, neural tube defects and Beri-beri.

iii) **Defining organic rice:**
Many candidates outlined that organic rice is rice grown using natural methods without the use of artificial chemicals found in fertilisers, herbicides, insecticides, etc… Some candidates also amplified and mentioned that the organic rice farmers use; organic fertilisers, crop rotation, biological pest control, maintaining soil health, supplying plant nutrient, minimizing insects, weeds and other pests, are used in organic farming which are not harmful to humans and the environment.

Those candidates who just outlined that organic rice is rice that is grown organically did not obtain any marks for their answer as there was no attempt to explain the term ‘organic’.

**Benefits for the consumers, the farmer and the environment:**
Many students did well in this question highlighting that the major benefits of organic rice for the:
- Consumers are: healthier and contains more nutrients, GMO free.
- farmer are: can apply for EU funding, less expensive, produces better quality produce that make higher profits
- Environment is: improved quality of soil, less toxic chemical hence better air, soil and water quality.
iv) *Explaining how a pressure cooker works:*
Some candidates mistook the pressure cooker for the slow cooker. Others did not use the appropriate terminology to explain how the pressure cooker works, but many did outline that pressure-cooking is a cooking method that uses steam sealed in a pressure cooker, which is a special airtight cooking pot. The steam raises the pressure inside the pressure cooker along with the maximum temperature that the liquid can reach. The increased temperature and pressure significantly speed up the cooking process.

*Explaining how energy conservation takes place:*
Many candidates did give the correct answer highlighting that when the cooking temperature is increased inside the pressure cooker, the time needed to cook food inside it is reduced. The food will cook faster inside the pressure cooker and hence less energy is required to cook the food.

v) *Precautions to follow when using a pressure cooker to ensure safety:*
Candidates did well in this question but some responses were too general, like using oven gloves when handling the pressure cooker, keeping children away from it, not touching it when hot, the pressure cooker handles should be turned to the inside of the hob and not to be left unattended. These were general safety precautions and not specific for the pressure cooker. Good responses were:

- Don't overfill the cooker.
- Avoid cooking foods that froth.
- The pressure cooker lid should be well locked shut to ensure that pressure is controlled and that the cooking environment remains safe.
- You should never try to open the lid while it is still under pressure.
- Release pressure in a safe way.
- Ensure that the value in placed corrected.
- Safety value should be clear, making sure it moves freely and isn't stuck
- Gasket should be in a good state.

Chairperson
2013 Examination Panel