



Rewarding Learning

**ADVANCED SUBSIDIARY (AS)
General Certificate of Education
January 2012**

Home Economics

Assessment Unit AS 2

assessing

Priority Health Issues

[AN121]

FRIDAY 13 JANUARY, MORNING

MARK SCHEME

Section A

AVAILABLE
MARKS

- 1 (a) Why might an increase in non-starch polysaccharide (NSP) intake protect against cardiovascular disease and obesity? (AO1, AO2, AO3)

Mark Band ([0]–[3])

Overall impression: basic

- inadequate knowledge and understanding of the health benefits of NSP
- demonstrates a limited ability to apply knowledge and understanding of the health benefits of NSP to the question
- demonstrates a limited ability to explain why an increase in non-starch polysaccharide (NSP) intake may protect against cardiovascular disease and obesity
- quality of written communication is basic

Mark Band ([4]–[7])

Overall impression: reasonable to good

- reasonable to good knowledge and understanding of the health benefits of NSP
- demonstrates a reasonable to good ability to apply knowledge and understanding of the health benefits of NSP to the question
- demonstrates a reasonable to good ability to explain why an increase in non-starch polysaccharide (NSP) intake may protect against cardiovascular disease and obesity
- quality of written communication is reasonable to good

Mark Band ([8]–[10])

Overall impression: very good to highly competent

- clear knowledge and understanding of the health benefits of NSP
- demonstrates a very good to highly competent ability to apply knowledge and understanding of the health benefits of NSP to the question
- demonstrates a very good to highly competent ability to explain why an increase in non-starch polysaccharide (NSP) intake may protect against cardiovascular disease and obesity
- quality of written communication is very good to highly competent

Some examples of suitable points to be explained by the candidate:

- soluble fibre; may reduce both total and LDL blood cholesterol levels, reducing the risk of CVD
- sterol excretion; unabsorbed NSP has the facility to bind other substances, for example, cholesterol can be eliminated from the bowel with the NSP residues
- satiating effect; fibre rich foods have a satiating effect that results in a lowered fat intake and possibly a reduced total energy intake; this could help maintain a healthy weight, reducing the risk of both obesity and CVD
- weight loss; there is consistent evidence that an increase in NSP intake is associated with a modest weight loss possibly as a result of extra chewing required and caloric excretion in faeces

- anti-oxidants; increasing NSP may result in more fruit and vegetable consumption providing anti-oxidants, vitamins A, C and E which protect against CVD

All other valid points will be given credit [10]

(b) Explain why diabetic diets should be based on complex carbohydrates. (AO1, AO2, AO3)

Mark Band ([0]–[3])

Overall impression: basic

- inadequate knowledge and understanding of diabetic diets
- demonstrates a limited ability to apply this knowledge and understanding to the question
- demonstrates a limited ability to explain the role of complex carbohydrates in the management of diabetes
- quality of written communication is basic

Mark Band ([4]–[7])

Overall impression: reasonable to good

- reasonable to good knowledge and understanding of diabetic diets
- demonstrates a reasonable to good ability to apply this knowledge and understanding to the question
- demonstrates a reasonable to good ability to explain the role of complex carbohydrates in the management of diabetes
- quality of written communication is reasonable to good

Mark Band ([8]–[10])

Overall impression: very good to highly competent

- clear knowledge and understanding of diabetic diets
- demonstrates a very good to highly competent ability to apply this knowledge and understanding to the question
- demonstrates a very good to highly competent ability to explain the role of complex carbohydrates in the management of diabetes
- quality of written communication is very good to highly competent

Some examples of suitable points to be explained by the candidate:

- weight control; starchy carbohydrates have a lower energy density and higher satiety value than most foods with a significant fat content; weight is a significant factor in the management of diabetes
- blood sugar levels; during passage through the digestive tract, some starchy carbohydrates particularly wholemeal varieties are digested slowly so effects on blood sugar levels are reduced
- fat consumption; increasing the consumption of complex carbohydrates can reduce the proportion of fat in the diet, thus reducing the risk of CVD for those with diabetes
- glycemic control; a diet high in complex carbohydrates improve glycemic control because they increase insulin sensitivity

All other valid points will be given credit [10]

20

- 2 (a) Describe the health benefits for the Northern Ireland population if nutritional targets for fat intake could be achieved. (AO1, AO2, AO3)

Mark Band ([0]–[3])

Overall impression: basic

- inadequate knowledge and understanding of the rationale for the Northern Ireland nutritional targets for fat intake
- demonstrates a limited ability to apply knowledge and understanding to the question
- demonstrates a limited ability to describe the health benefits associated with the targets
- quality of written communication is basic

Mark Band ([4]–[7])

Overall impression: reasonable to good

- reasonable to good knowledge and understanding of the rationale for the Northern Ireland nutritional targets for fat intake
- demonstrates a reasonable to good ability to apply knowledge and understanding to the question
- demonstrates a reasonable to good ability to describe the health benefits associated with the targets
- quality of written communication is reasonable to good

Mark Band ([8]–[10])

Overall impression: very good to highly competent

- clear knowledge and understanding of the rationale for the Northern Ireland nutritional targets for fat intake
- demonstrates a very good to highly competent ability to apply knowledge and understanding to the question
- demonstrates a very good to highly competent ability to describe the health benefits associated with the targets
- quality of written communication is very good to highly competent

Some examples of suitable points to be explained by the candidate:

- reduced incidence of obesity; a reduction in total fat intake would help individuals in Northern Ireland maintain a healthy weight, consequently, reducing their risks of obesity, CVD, Type 2 diabetes
- reduced incidence of CVD; a reduction in saturated fatty acids and trans fatty acids would help individuals manage their total and LDL cholesterol; increasing consumption of n-3 polyunsaturated fatty acids will help lowering LDL cholesterol without lowering HDL
- reduced incidence of some cancers; a reduction in total fat intake could help reduce the risks of breast, colon and prostate cancers as well as possibly cancer of the ovary, kidneys and pancreas
- reduced incidence of hypertension; being overweight or obese is associated with increased blood pressure and weight loss reduces blood pressure in those with hypertension

All other valid points will be given credit

[10]

- (b) One of the action areas identified in the *Eating for Health – A Food and Nutrition Strategy for Northern Ireland* is to provide the public with information about diet and health.

Outline some of the steps that have been taken in Northern Ireland to provide the public with this information. (AO1, AO2, AO3)

Mark Band ([0]–[3])

Overall impression: basic

- inadequate knowledge and understanding of the implementation of the *Eating and Health – A Food and Nutrition Strategy for Northern Ireland*
- demonstrates a limited ability to apply knowledge and understanding to the question
- demonstrates a limited ability to explain how the public in Northern Ireland are provided with information to help them improve their diet
- quality of written communication is basic

Mark Band ([4]–[7])

Overall impression: reasonable to good

- reasonable to good knowledge and understanding of the implementation of the *Eating and Health – A Food and Nutrition Strategy for Northern Ireland*
- demonstrates a reasonable to good ability to apply knowledge and understanding to the question
- demonstrates a reasonable to good ability to explain how the public in Northern Ireland are provided with information to help them improve their diet
- quality of written communication is reasonable to good

Mark Band ([8]–[10])

Overall impression: very good to highly competent

- clear knowledge and understanding of the implementation of the *Eating and Health – A Food and Nutrition Strategy for Northern Ireland*
- demonstrates a very good to highly competent ability to apply knowledge and understanding to the question
- demonstrates a very good to highly competent ability to explain how the public in Northern Ireland are provided with information to help them improve their diet
- quality of written communication is very good to highly competent

Some examples of suitable points to be explained by the candidate:

- public information websites; these provide guidance and support and information on nutrition and how to achieve a healthy diet, e.g. Public Health Agency (PHA) and Food Standards Agency (FSA)
- education campaigns and community based programmes; these provide easy to understand healthy eating messages in communities, schools and workplaces, e.g. 5-a-day, SNAGS in schools
- specific regional advertising; providing healthy eating messages to the public, e.g. leaflets, TV advertising, billboards and posters
- front of pack and traffic light labelling; consumers have been provided with clearer nutritional information about the fat, sugar and salt content of their foods

All other valid points will be given credit

[10]

20

Section A

20

Section B

AVAILABLE
MARKS

- 3 The Northern Ireland Health and Social Wellbeing Survey 2005/06 found that the 55–64 age group were most likely to experience mental health problems.

Suggest possible reasons for this finding. (AO1, AO2, AO3)

Mark Band ([0]–[5])

Overall impression: basic

- inadequate knowledge and understanding of reasons for mental health problems in the 55–64 age group
- demonstrates a limited ability to apply knowledge and understanding to the question
- demonstrates a limited ability to suggest possible reasons for mental health problems in this age group
- quality of written communication is basic

Mark Band ([6]–[10])

Overall impression: adequate to minimally competent

- adequate to minimally competent knowledge and understanding of mental health problems in the 55–64 age group
- demonstrates adequate to minimally competent ability to apply knowledge and understanding to the question
- demonstrates adequate to minimally competent ability to suggest possible reasons for mental health problems in this age group
- quality of written communication is adequate to minimally competent

Mark Band ([11]–[15])

Overall impression: reasonable to good

- reasonable to good knowledge and understanding of mental health problems in the 55–64 age group
- demonstrates a reasonable to good ability to apply knowledge and understanding to the question
- demonstrates a reasonable to good ability to suggest possible reasons for mental health problems in this age group
- quality of written communication is reasonable to good

Mark Band ([16]–[20])

Overall impression: very good to highly competent

- clear knowledge and understanding of mental health problems in the 55–64 age group
- demonstrates a very good to highly competent ability to apply knowledge and understanding to the question
- demonstrates a very good to highly competent ability to suggest possible reasons for mental health problems in this age group
- quality of written communication is very good to highly competent

Some examples of suitable points to be suggested by the candidate:

- working long hours; can lead to symptoms of stress, feeling unappreciated and low self-worth as well as tiredness and irritability; symptoms can be heightened if conditions continue for an extended period or if the individual feels trapped due to financial commitments
- fear of redundancy; can lead to anxiety, insecurity, unable to concentrate, disrupted sleep patterns, tearful and feelings of being unable to cope
- harassment from colleagues; can lead to stress, irritability, inability to relax or forget about work
- caring for parents; increased responsibility can lead to stress, can experience anxiety about parents' health or resentment about time commitment
- coping with bereavement; at this age, death or illness of friends or siblings is unexpected and stressful, death of parents can leave the individual feeling lonely and isolated increasing the risk of depression; fear of own mortality can also become heightened causing anxiety
- financial worries; due to redundancy, pension or investment concerns can cause anxiety
- parenting problems; may still be experiencing problems with teenage or adult children relating to money, job or relationship issues; can also be depressed because children have left home – no longer needed, feelings of rejection; children may also have returned home as adults, creating a stressful environment
- relationships; there can be any number of relationship problems or breakdown at this age – siblings, partner, children, friends, work colleagues; all of these result in stress and disappointment, especially as most of these relationships will have been long standing

All other valid points will be given credit

[20]

20

- 4** Discuss the rationale for the Northern Ireland Physical Activity Strategy Action Plan 1998–2002. (AO1, AO2, AO3)

Mark Band ([0]–[5])

Overall impression: basic

- inadequate knowledge and understanding of the Northern Ireland Physical Activity Strategy Action Plan 1998–2002
- demonstrates a limited ability to apply knowledge and understanding to the question
- demonstrates a limited ability to discuss the rationale for this strategy
- quality of written communication is basic

Mark Band ([6]–[10])

Overall impression: adequate to minimally competent

- adequate to minimally competent knowledge and understanding of the Northern Ireland Physical Activity Strategy Action Plan 1998–2002
- demonstrates adequate to minimally competent ability to apply knowledge and understanding to the question
- demonstrates adequate to minimally competent ability to discuss the rationale for this strategy
- quality of written communication is adequate to minimally competent

Mark Band ([11]–[15])

Overall impression: reasonable to good

- reasonable to good knowledge and understanding of the Northern Ireland Physical Activity Strategy Action Plan 1998–2002
- demonstrates a reasonable to good ability to apply knowledge and understanding to the question
- demonstrates a reasonable to good ability to discuss the rationale for this strategy
- quality of written communication is reasonable to good

Mark Band ([16]–[20])

Overall impression: very good to highly competent

- clear knowledge and understanding of the Northern Ireland Physical Activity Strategy Action Plan 1998–2002
- demonstrates a very good to highly competent ability to apply knowledge and understanding to the question
- demonstrates a very good to highly competent ability to discuss the rationale for this strategy
- quality of written communication is very good to highly competent

Some examples of suitable points to be discussed by the candidate:

- control of body weight; exercise uses up calories and so can contribute to weight loss although it is thought that weight loss will be quicker if dietary calories are reduced. Exercise is considered to be more useful in achieving energy balance once weight is lost
- reduced risk of CVD; exercise has been shown to increase the beneficial high density lipoprotein. Abdominal fat responds well to exercise which is good as a strong relationship with heart disease exists for people with central obesity
- reduced risk of high blood pressure; exercise reduces blood pressure
- reduced risk of bowel cancer; a number of studies have indicated a link between exercise and bowel cancer, it is not clear yet why exercise should help – it may alter levels of hormones which are key to cancer development, or perhaps alter the speed at which food moves through the bowel
- reduced risk of diabetes; exercise improves insulin sensitivity and reduces blood glucose

- reduced risk of osteoporosis; weight bearing exercise promotes bone metabolism as well as helping to maintain a normal body weight as body size is generally a good indicator of bone mass
- improved mental health; exercise decreases the stress hormones such as cortisol and increases endorphins which improves mood and well-being and a better capacity to cope with stress
- improved self-esteem; exercise can lead to a person having a better body image. Lack of self esteem can lead to depression, high self-esteem can lead to healthy and positive thinking
- increased longevity; exercise increases the likelihood of a longer life and overall improved mobility

All other valid points will be given credit

[20]

20

- 5 Propose and justify the dietary advice you would give to reduce the risk of cancer. (AO1, AO2, AO3)

Mark Band ([0]–[5])

Overall impression: basic

- inadequate knowledge and understanding of the relationship between diet and cancer
- demonstrates a limited ability to apply knowledge and understanding to the question
- demonstrates a limited ability to propose appropriate advice to reduce the risk of cancer
- demonstrates a limited ability to justify this advice
- quality of written communication is basic

Mark Band ([6]–[10])

Overall impression: adequate to minimally competent

- adequate to minimally competent knowledge and understanding of the relationship between diet and cancer
- demonstrates adequate to minimally competent ability to apply knowledge and understanding to the question
- demonstrates adequate to minimally competent ability to propose appropriate advice to reduce the risk of cancer
- demonstrates adequate to minimally competent ability to justify this advice
- quality of written communication is adequate to minimally competent

Mark Band ([11]–[15])

Overall impression: reasonable to good

- reasonable to good knowledge and understanding of the relationship between diet and cancer
- demonstrates a reasonable to good ability to apply knowledge and understanding to the question
- demonstrates a reasonable to good ability to propose appropriate advice to reduce the risk of cancer
- demonstrates a reasonable to good ability to justify this advice
- quality of written communication is reasonable to good

Mark Band ([16]–[20])

Overall impression: very good to highly competent

- clear knowledge and understanding of the relationship between diet and cancer
- demonstrates a very good to highly competent ability to apply knowledge and understanding to the question
- demonstrates a very good to highly competent ability to propose appropriate advice to reduce the risk of cancer
- demonstrates a very good to highly competent ability to justify this advice
- quality of written communication is very good to highly competent

Some examples of suitable advice to be proposed and justified by the candidate:

- reduce total fat intake; associations with fat intake have been reported for cancers of the breast, colon and prostate, as well as weak relationships for cancer of the ovary, kidneys and pancreas. Excess fat can cause weight gain and obesity, these are risk factors for cancers of the oesophagus, colon, pancreas, endometrium, kidney, gallbladder and breast in post menopausal women. Obesity increases the risk of breast cancer probably due to the associated increases in hormones
- increase consumption of fruit and vegetables; fruit and vegetables provide vitamins and plant pigments that have antioxidant properties and so have the capacity to scavenge free radicals. Oxygen free radicals can react with DNA to cause breaks in the DNA chain and mutation; this could initiate carcinogenesis
- increase intake of non starch polysaccharides (NSP); NSP may protect against colon cancer as it increases bulk and therefore faster transit time through the colon; as a result potentially harmful carcinogenic substances are present in a more dilute form and are in contact with the colonic mucosa for a shorter time
- reduce salt intake; salt has been suggested as a causative factor in stomach cancer
- drink alcohol in moderation; there is an association between consumption of alcohol and cancers of the mouth, throat and oesophagus as well as the liver. Consumption above a moderate level is also associated with a rise in breast cancer. The risk of these cancers is nine times greater in those drinking 7–8 units a day compared with those drinking 3–4 units or less
- reduce consumption of red meat; red meat can contribute to the promotion of colon cancer due to N-nitrosocompounds
- reduce consumption of processed meats; it is thought that the addition of nitrates to some processed meats explains why they are linked to colon cancer and stomach cancer
- avoid high temperature cooking of meat; grilling, barbecuing and frying produce polycyclic hydrocarbons which are associated with higher cancer risk

All other valid points will be given credit

[20]

Section B

Total

20

40

60