



*Rewarding Learning*

**ADVANCED SUBSIDIARY (AS)  
General Certificate of Education  
2014**

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**Sports Science and the  
Active Leisure Industry**

**Unit AS 2**

**The Active Leisure Industry:  
Health, Fitness and Lifestyle**

**[A1L21]**

**THURSDAY 29 MAY, AFTERNOON**

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**MARK  
SCHEME**

## General Marking Instructions

### Introduction

Mark schemes are published to assist teachers and students in their preparation for examinations. Through the mark schemes teachers and students will be able to see what examiners are looking for in response to questions and exactly where the marks have been awarded. The publishing of the mark schemes may help to show that examiners are not concerned about finding out what a student does not know but rather with rewarding students for what they do know.

### The Purpose of Mark Schemes

Examination papers are set and revised by teams of examiners and revisers appointed by the Council. The teams of examiners and revisers include experienced teachers who are familiar with the level and standards expected of students in schools and colleges.

The job of the examiners is to set the questions and the mark schemes; and the job of the revisers is to review the questions and mark schemes commenting on a large range of issues about which they must be satisfied before the question papers and mark schemes are finalised.

The questions and the mark schemes are developed in association with each other so that the issues of differentiation and positive achievement can be addressed right from the start. Mark schemes, therefore, are regarded as part of an integral process which begins with the setting of questions and ends with the marking of the examination.

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all the markers are following exactly the same instructions and making the same judgements in so far as this is possible. Before marking begins a standardising meeting is held where all the markers are briefed using the mark scheme and samples of the students' work in the form of scripts. Consideration is also given at this stage to any comments on the operational papers received from teachers and their organisations. During this meeting, and up to and including the end of the marking, there is provision for amendments to be made to the mark scheme. What is published represents this final form of the mark scheme.

It is important to recognise that in some cases there may well be other correct responses which are equally acceptable to those published: the mark scheme can only cover those responses which emerged in the examination. There may also be instances where certain judgements may have to be left to the experience of the examiner, for example, where there is no absolute correct response – all teachers will be familiar with making such judgements.

## 1 (a) Explain the purpose of protein in an athlete's diet.

Answers may address some of the following points:

- Absorbed as amino acids in the small intestine. Used for growth and repair by all tissues.
- Used as an energy source when the body is depleted of carbohydrates and fat. Excess protein not needed for tissue repair is broken down and used as an energy supply.
- Proteins are of prime importance because they are the building blocks that make up the structures of the body.
- Athletes get protein by eating protein rich foods, e.g. chicken, red meat, eggs, which in turn is used for muscle growth and repair.
- The athlete's diet should consist of between 10-20% protein, depending on the specific needs of the individual athlete. This is to meet the demands of the activity and to aid muscular growth and repair.

Award [1] mark for key phrase and up to [2] marks for the explanation.

All other valid points will be given credit.

(AO2)

[2]

(b) Explain the importance of a balanced diet and hydration for achieving general health and well being.

Answers may address some of the following points:

(i) Balanced Diet

- The term balanced diet refers to the daily intake of food containing the right type and amounts of nutrients.
- A well constructed diet is essential for optimal performance. This is made up of a variety of different nutrients to keep the body fit and healthy.
- It is essential that a balanced diet is made up of carbohydrates, fats, proteins, vitamins, minerals, fibre and water.
- A balanced diet should be made up of 55% to 60% of carbohydrates, 25% to 30% of fats, 10% to 15% of proteins.
- A good, well balanced diet will ensure that the correct amount of calorie intake provides the body with enough energy to complete tasks and is important aspect of weight control.
- Eating the correct quantities and combinations of food will keep the body's systems functioning effectively and efficiently.

(ii) Hydration

- It is important to keep the body hydrated, as water is responsible for many different roles within the body. The body consists of 2/3 water.
- To keep the body hydrated is vitally important as water is the main transport mechanism in the body, carrying nutrients and removing waste products.
- Fuelling the body appropriately helps with the temperature regulation, particularly during exercise.
- Keeping the body hydrated is vital to prevent the physiological effects of dehydration, for example, impaired performance, heat exhaustion, circulatory collapse and heat stroke, hallucinations, capacity for muscular work declines.

Award [1] mark for a brief explanation and up to [2] marks for a full answer.

All other valid points will be given credit.

(2 × [2])

(AO2)

[4]

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- (c) Identify three hypokinetic diseases and describe how exercise can help to prevent them.

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Answers may address some of the following points:

#### Coronary Heart Disease

- Is a narrowing of the coronary arteries, which are the blood vessels that pass over the surface of the heart and supply it with blood. Regular exercise will strengthen the heart and cardiovascular system and reduce the chances of CHD.
- CHD is usually a result of a build-up of fatty material within the blood vessels restricting the normal flow of blood.
- Taking part in regular exercise can reduce the risk of heart disease directly and indirectly.
- Exercise increases levels of HDL cholesterol and decreases the amount of triglycerides in the bloodstream, prevents blockages in the arteries.
- Exercise improves circulation by preventing blood clots that can lead to a heart attack. By exercising, this will help to reduce body fat and will therefore have an impact on weight management, preventing coronary heart disease.

#### Obesity

- A person is classed as being obese when their body fat levels exceed 20% or more.
- Results from energy imbalance. Too many calories in, too few calories burned. This excess energy is then stored as fat. Obese people are at risk of developing a number of medical conditions which can cause poor health. By exercising, this will burn up calories, which should then result in the person being in negative energy balance.
- When exercising, people will start to burn kilocalories from their fat stores and will lose weight.
- When participating in physical activity, combined with a balanced diet, it can help to prevent obesity and aid weight management.

#### High Blood Pressure (Hypertension)

- A person is deemed to have hypertension if their blood pressure consistently reads at 140/90 or higher. If a person with hypertension/ high blood pressure does not reduce their blood pressure they are more at risk of suffering a stroke or a heart attack. Regular physical activity makes the heart stronger.
- A stronger heart can pump more blood with less effort and therefore, the heart does not have to work as hard.
- By exercising, the strong heart can work less to pump blood, the force on the arteries decreases, lowering blood pressure.

#### Diabetes

- Is a disease in which the body does not produce or properly use insulin. There are two types of diabetes – one is insulin dependent (type 1) and the other is non-insulin dependent (type 2). Type 2 diabetes means that a person's body is either unable to make enough insulin or it has become less sensitive to insulin. This results in elevated levels of glucose in the bloodstream. Diet and exercise can be incorporated into a care plan to control type 2 diabetes.
- Being physically active improves blood glucose levels.

- By exercising, it has a positive effect on body fat and blood pressure levels. Burning excess body fat helps to decrease and control body weight which results in improved insulin sensitivity.

#### Osteoporosis

- Is a disease in which the mineral density of bones is decreased, resulting in the bones becoming fragile and more likely to break.
- If a person has exercised in childhood and adolescence they are more likely to build strong, dense bones.
- By exercising, this builds and maintains the amount and thickness of the bones, bone mass and density. Exercising regularly can reduce the rate of this loss.
- Specific types of exercises are important for improving bone strength. Weight bearing exercises, e.g. walking, jogging, skipping. Progressive resistance training can help to strengthen muscles and build bone. Flexibility can also be used to keep joints flexible, helping to prevent injury.

Award [1] mark for a brief description and up to [2] marks for a full explanation.

All other valid points will be given credit.

(3 × [2])

(AO2)

[6]

- (d) Research by the Department of Health suggests that the current level of obesity among adults is 24.8% and 16.3% of children are obese. There has been a marked increase in obesity rates in the UK over the past eight years.

Examine two government initiatives which are aimed at improving the nation's diet and reducing the obesity levels in the UK.

Answers may address some of the following points:

#### 5 A Day Initiative

- The 5 A Day Initiative is aimed at getting people to increase the amount of fruit and vegetables they consume on a daily basis
- 5 A Day highlights the health benefits of getting five 80g portions of fruit and vegetables daily which can help to improve and maintain people's health, boost the immune system, have a healthy body, lowers the chances of disease and infection, e.g. reducing the risk of heart disease, obesity, type 2 diabetes, stroke and some cancers.
- Enables people to achieve a balanced diet by incorporating fruit and vegetables, addressing vitamin and mineral consumption. Fruit and vegetables are low in fat and calories, enabling people to maintain a healthy weight and keeps the heart healthy.
- Encouraging a mixed variety of fruit and vegetables because they contain different combinations of fibre, vitamins, minerals and other essential nutrients to help keep the body healthy.
- The Government led 5 A Day programme aims to increase fruit and vegetable consumption by raising awareness of the health benefits and improving access to fruit and vegetables through targeted action.
- The 5 A Day programme has five strands which are underpinned by an evaluation and monitoring programme. School fruit and vegetable Scheme, local 5 A Day initiatives, national/local partners (Government Health Consumer Groups), Communication programme including 5 A Day logo, working with industry – producers, caterers and retailers.
- The main barriers to eating more fruit and vegetables are access and

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availability – whether people have access to good quality, affordable fruit and vegetables.

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#### Change4life Initiative

- Change4life aims to create a movement in which everyone in society plays their part, helping to create fundamental changes to those behaviours that can help people lead healthier lives.
- Change4life is a public health programme which began in 2009, run by the Department of Health to tackle the cause of obesity and improve the health of the nation.
- Change4life has become one of the most instantly recognisable brands in health improvement. The government has invested a lot of money since 2009 to make this initiative work at improving the health of the nation.
- In January 2014, the new Change4life healthy eating campaign was launched. It encourages and supports families to make one easy healthy swap to their everyday food and drink to cut out high amounts of sugar and fat from their diet.
- Change4life aims to help people to make small, sustainable yet significant improvements to their diet, activity levels and alcohol consumption. It uses the slogan “eat well, move more, live longer”. This would have a major impact for people thinking of making changes to improve their health and reduce the chances of being obese. Change4life encourages people to adopt to healthy behaviours.
- Sugar swaps – advice on information about the sugar found in foods and suggestions for healthier alternatives. This educates people and would have an impact on people’s health, reducing levels of obesity, if changes were made and incorporated into a balanced diet.
- Choose less alcohol – ways for adults to cut down on alcohol consumption to within government lower risk guidelines and raising awareness of the hidden calories in alcohol.
- Get going everyday – advice on why it is important to lead an active lifestyle. This is an excellent way to manage weight, burning off excess calories and reducing the chances of obesity.
- The Government has looked for support from everyone in the country, from grass roots organisations to leading supermarkets and charities, encouraging responsible business. Through the Public Health Responsibility Deal, businesses and organisations can make it easier for everyone – from staff and customers, to make healthier choices.

#### Healthy Schools Programme – Healthy Eating

- The National Healthy Schools Programme is a long-term government initiative aiming to create children who are happier, are healthier, stay safe and do better in learning and life.
- The Healthy Schools Programme involves students, parents, young people, school staff and the whole school community working together in an effort to equip children with the skills and knowledge for them to make informed choices about healthy living.
- There are four themes to this government initiative, personal, social and health education, physical activity, healthy eating, emotional health and well-being.
- This initiative aims to help children and young people to develop healthy behaviour, raise their achievement, reduce health inequalities and promote social inclusion.

- Schools must adopt a healthy eating policy which should provide details of the balance of food available for both students and staff to buy.
- The Whole School Food Policy helps to guide each school to develop their own meaningful and appropriate food policy to meet the needs of their students and staff. By doing this, it is hoped the policy will establish individual values and a school ethos based on food's part in health and well-being.
- The aim of the healthy food policy is to create working partnerships with catering and teaching staff, to provide parents with information on food in school, promotion of the healthy eating message, giving children access to healthy foods at breakfast clubs, lunch times and in the tuck shop.

All other valid points will be given credit.

### Level 1 ([1]-[3])

#### Overall impression: Basic

- Basic knowledge and understanding of the government's initiatives which are aimed at reducing the obesity levels in the UK.
- Demonstrates a basic ability to examine how the government's initiatives could be used to improve the health of the nation and reduce obesity levels.
- Demonstrates a basic ability to examine the effectiveness of the government's initiatives regarding an improvement in the nation's diet.
- Quality of written communication is basic. The candidate makes a limited selection and use of an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

### Level 2 ([4]-[6])

#### Overall impression: Good

- Good knowledge and understanding of the government's initiatives which are aimed at reducing the obesity levels in the UK.
- Demonstrates a good ability to examine how the government initiatives could be used to improve the health of the nation and reduce obesity levels.
- Demonstrates a good ability to examine the effectiveness of the government's initiatives regarding an improvement in the nations' diet.
- Quality of written communication is good. The candidate makes a reasonable selection and use of an appropriate form and style of writing. Relevant material is organised with some clarity and coherence. There is adequate use of specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently competent to make meaning clear.

### Level 3 ([7]-[8])

#### Overall impression: Excellent

- Excellent knowledge and understanding of the government's initiatives which are aimed at reducing the obesity levels in the UK.
- Demonstrates an excellent ability to examine how the government's initiatives could be used to improve the health of the nation and reduce obesity levels.
- Demonstrates an excellent ability to examine the effectiveness of the

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- government's initiatives regarding an improvement in the nation's diet.
- Quality of written communication is excellent. The candidate successfully selects and uses an appropriate form and style of writing. Relevant material is organised with a degree of clarity and coherence. There is extensive and accurate use of specialist vocabulary. Presentation, spelling, punctuation and grammar are of a high standard and ensure the meaning is clear.

[0] is awarded for a response not worthy of credit.

(AO1, AO3)

[8]

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20

- 2 (a) Identify and explain three other factors that could be taken into consideration to improve their health and well being.

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Answers may address some of the following points:

#### Drugs Misuse

- Managing alcohol consumption
  - Research shows that people are drinking more than the recommended daily amounts for alcohol consumption. It is recommended that women should drink no more than two units of alcohol per day and males, no more than three units per day. To improve health and well being, both males and females should have at least two alcohol free days per week.
  - The abuse of alcohol can lead to severe mental illness, characterised by dependence and addiction. The need to manage alcohol consumption is important to avoid or reduce the chances of this psychological change.
  - Reducing the amount of alcohol consumed can have a positive impact on health and well being, e.g. by reducing the chances of high blood pressure and other diseases such as stroke, liver problems and some cancers.
  
- Nicotine Use
  - The dangers of smoking are widely publicised. In recent years the government has spent almost £23 million on campaigns aimed at preventing smoking. People are fully aware of the short and long term effects of smoking and passive smoking.
  - Stopping smoking is the single most important step to take to protect health. However, as nicotine is addictive, this can be extremely difficult for people to do. Therefore, it is possible to get help and find a programme that would suit the individual, using patches, gum, spray or cessation programme.
  - By quitting, it will improve an individual's health and can dramatically reduce risk of coronary heart disease, stroke and a variety of cancers.
  
- Illegal Drug Misuse
  - Recreational drugs such as marijuana, cocaine or heroin are extremely dangerous and can have serious consequences for an individual.
  - Chronic use of drugs can have an impact on the physical, mental and social well-being of the individual.
  
- Stress Management
  - Research has indicated that a person's emotional state or the amount of stress they experience, can have a significant effect on their lives. It is very important to look at ways to reduce the amount of stress a person experiences to improve their health and well being. Establishing positive ways of controlling the stress levels will have an effect on the persons' health.
  - Stress is a response of the body to any demands made on it. The symptoms of stress are physiological, psychological and behavioural. It is very important to identify the issues and make changes which will improve a person's health and well being.
  - If a person can change their lifestyle in a positive way it will help them feel better to be able to cope with the demands placed upon them. Most stressed individuals do not give themselves sufficient time and

space to rest after each stress-filled moment. With no release, the stress hormones keep on working, having a negative impact on the physiological, psychological and behavioural state of the individual.

- Work/life Balance
- The imbalance between work life and home life can lead to excessive levels of stress which would have a negative impact on your lifestyle. This is an area that would need to be managed carefully to improve health and well being.
- Work related stress will impact your health. Causes of stress could be increased workload and job dissatisfaction. Conflict, family relationship problems and financial problems will cause an imbalance.
- To be able to make positive changes to your lifestyle to improve health and well being, it is important for individuals to be able to identify any issues in relation to work/life balance. They need to make necessary changes and have the ability to seek help and assistance if required.

Award [1] mark for each related area identified and up to [2] marks for the explanation.

All other valid points will be given credit.

(3 × [3])

(AO1, AO2)

[9]

- (b)** Identify **five** factors that need to be considered when goal setting and explain how each can be used as a motivational strategy to achieve success in physical activities.

Answers may address some of the following points:

In order for goal setting to be effective, the SMARTER principle could be applied. To improve mental health and motivation, the athlete needs to focus on –

- Specific – the goal must be related to the individuals/ athletes aims. It is important to focus on an individual's goals. Each person has different ambitions and aspirations.
- Measurable – for the athlete the goal must be able to be assessed and recorded to allow the performer to see his/her progress, aiding motivation.
- Achievable – the athlete should be able to achieve the goals set.
- Realistic – the goal must be within the athlete's capabilities otherwise it will have a negative impact mentally on the performer.
- Time-bound – each goal must have a fixed deadline for evaluation, otherwise the athlete may lose motivation.
- Exciting – the goal must be viewed as a challenge to the athlete and he/she must be motivated to achieve success.
- Recorded – all goals should be recorded for evaluation. This feedback can aid motivation and confidence to improve and progress.
- Goal setting is important for improving performance. Setting out staged and achievable goals will keep an athlete motivated.
- Goals can mentally prepare the performer for an activity or competition.
- Motivation is regulated by the expectation that a given course of behaviour will produce certain outcomes.
- An athlete's goals can be broken down into short, medium and long-term goals, which must be set and agreed by the athlete. Reaching goals indicate the progress in training.
- Goal setting can be highly effective. It allows the athlete to remain

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focused but be constantly challenged. This has a positive impact on motivation, commitment and self-confidence.

Award [1] mark for each factor identified, [2] for full explanation.

(5 × [2])

[10]

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19

- 3 (a) Identify and explain **one** social benefit and **one** psychological benefit for an individual participating in physical activity.

Answers may address some of the following points:

Psychological (Mental)

- Helps to relieve stress, anxiety and depression. The mind is occupied when exercising, which can act as a distraction from the problems of daily life.
- Research has shown that exercise can improve concentration, enhance memory and learning, leading to better performance and results for an individual.
- Helps the individuals to feel good as endorphins/serotonin are released in the brain “happy hormones”. This can contribute to enjoyment of life.
- Can provide excitement, participating in sport, physical activity, setting goals and challenges and a sense of achievement can have a positive mental impact on the individual.
- Improves self-esteem, feelings of self-worth, being part of a group/team which is the provision of a positive social environment.
- Can relieve aggression – channelled into sport, in a more positive, controlled manner, where it can be at times a mood altering experience. By participating in physical activity there is an enhancement of mental health and a sense of well being.
- Reduces feeling of fatigue, have more energy to keep going and can boost daily activities, the ability to cope better.
- Participation in physical activity offers individuals a vehicle for responsible risk taking behaviour. This is the healthy approach to experiencing an adrenalin rush and pushing the boundaries.

Social

- By participating in regular physical activity, it encourages team-work and co-operation with others.
- Fulfilment of being part of a team, a sense of loyalty, developing the feeling of belonging to a group/team.
- Promotes friendships and commitment, increasing community cohesion by participating in a sport or physical activity.
- Healthy competition, testing yourself against others. Through participation in sport and physical activity individuals learn to deal with winning and losing and self discipline and how to conduct yourself appropriately in front of others.
- By being part of a team, there is a reduction in the sense of isolation and loneliness.
- There are many skills gained from being part of a team, development of leadership skills, and development of empathy, which can influence healthy behaviours.
- Sport has helped individuals to build social skills and has deterred anti-social behaviour.

Award [1] mark for identification of key phrase and up to [2] marks for full explanation.

All other valid points will be given credit.

(2 × [3])

(AO1, AO2)

[6]

- (b) Explain **three** ways how effective rest and recovery can maximise an athlete's performance.

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Answers may address some of the following points:

- Recovery is defined as the process the athlete goes through to return the body to normal physiological function, the reduction of muscle soreness and reduction of fatigue. A well designed recovery strategy can enhance the athlete's adaptation to the stress of exercise and prevent burnout.
- Rest refers to sleep and passive resting such as, e.g. relaxation techniques, listening to music. Sleep can have an effect on a performer, where repair and regeneration is happening. Quality sleep is an integral part of the recovery process. Sleep is one of the most important forms of rest and enables the body to adapt to the physical and mental demands of training.
- For training to be effective there should be a balance between exercise, rest and recovery. Damage and injury can result if recovery phases are not planned and incorporated into a training programme.
- Rest and recovery gives time for restoration of energy producing enzymes in muscle fibres, stores of carbohydrates in muscle cells and hormonal balance and immune system.
- In order to get fitter or improve in sport, the body needs to be exposed to stresses (training or exercise). The body needs time to adapt to the stresses placed upon it and for this there must be a period of recovery.
- Rest and recovery are important aspects for the prevention of injury and are built into the rehabilitation process of an injured athlete. If rest and recovery are not catered for appropriately and properly, the body will soon start to show signs of fatigue and the athlete will find it difficult to progress or compete at the expected levels. Performance will be affected or hindered.

Award [1] mark for key phrase and up to [2] marks for the explanation and [3] marks for full explanation.

All other valid points will be given credit.

(3 × [3])

(AO2)

[9]

- (c) Explain **three** advantages and **three** disadvantages of using circuit training as a training method to improve specific components of fitness.

Answers may address some of the following points:

Advantages

- Develops muscular strength, muscular endurance and cardiovascular endurance.
- Appropriate form of training for most sports and can be sport specific.
- Can be adjusted with ease to suit age, fitness and health of the athlete and enables a large number of participants to train together
- A wide range of exercises to select from which will maintain the athletes' enthusiasm and motivational level.
- Easy to measure improvements from previous sessions, e.g. by counting the number of repetitions achieved in the time period.

Disadvantages

- Many exercises require specialised equipment to carry out the training.

- Ample space is required to set up the circuit exercises and equipment.
- In general, circuit training can only be conducted where appropriate facilities/equipment are available.
- Use of additional equipment requires appropriate health and safety monitoring.
- Can cause chronic injury through repetitive impact for some athletes.

Award [1] mark for each advantage and explanation ( $3 \times [1]$ ) and [1] for each disadvantage and explanation ( $3 \times [1]$ ).

All other valid points will be given credit.

(AO2)

[6]

- (d) Define **three** components of fitness needed to participate in a sport or physical activity and justify their inclusion.

Answers may address some of the following points:

Power – The ability to use strength quickly (strength  $\times$  speed)

- For power to be applied successfully to a sporting action there has to be a well-balanced level of strength and speed. Power is necessary to throw further, jump during takeoff, aiding a powerful shot being taken, accelerating in a game situation.

Speed – The maximum rate at which a person is able to move his/her body to cover a specific distance.

- Necessary to move quicker and beat an opponent, to finish quickly, time specific. As sporting activities vary so too do the areas of the body requiring speed – a sprinter will need leg speed whereas the shot-putter's arm speed is vital to success.

Cardiovascular Endurance – the ability of the heart and lungs to supply enough oxygen to the required muscles during a physical activity for a prolonged period of time.

- Necessary to last the full game, the ability to keep going over a specified distance. In training, the cardiovascular system needs to be fit to keep the body working so the skill level will be reached. In competition, fatigue and breathlessness would prevent a person playing to the required standard or continuing in the activity. Therefore, the better the heart and lungs – the better the athlete's cardiovascular endurance and stamina – the more efficiently the body will get oxygen to the working muscles and remove waste products from the body.

Strength – the maximum force exerted by a specific muscle or muscle group during a single maximal muscle contraction or one repetition maximum.

- Necessary to push hard against the opposition, to hold a weight, required for flat out movements, throwing, the specific exerted movement, pushing out of the blocks when sprinting. Strength can be used to overpower an opponent.

Flexibility – the range of movement around a joint.

- Necessary were great flexibility is used to achieve a desired movement. Changing the body in different positions. Prevention of injury, when participating in games or physical activity. Controlled use of the full range of movement available at a joint can allow for the full execution of the correct technique, improving performance and lessening the risk of

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injury. Where a resistance to a force is necessary, the muscles must be strong enough to prevent overextension beyond the fullest range. This is evident in rugby, where players in a scrum must have muscles strong enough to prevent overextension of their shoulders.

**Muscular Endurance** – specific muscles or group of muscles making repeated contractions over a significant period of time.

- Necessary in activities where the body is producing energy under aerobic and anaerobic conditions, continuous sprinting in a game situation, repetitive movements in physical activity. Muscular endurance is essential for long-distance events such as 10,000m racing. The body is able to keep going for a long time without tiring and so the performer has more chance of winning.

**Agility** – the physical ability that enables a person/athlete to quickly change body positions in a precise manner.

- Necessary in activities as athletes continually change positions where they must combine balance, co-ordination, speed and flexibility. Rugby players need great agility as they weave in and out around the opposition. In netball, the players are constantly dodging to escape a marker on court.

**Balance** – the ability to return the centre of mass of a sportsperson's body above the base of support.

- This is necessary in activities where balance can be static, where the athlete is required to hold a position, for example, a gymnast doing a handstand. In some activities dynamic balance is used. This is where the athlete must have the ability to maintain balance under changing conditions of body movement, shape and orientation. For example, the changing balance required during a pole vault performance.

**Co-ordination** – the ability to perform smooth and accurate motor tasks, often involving the use of senses.

- This is necessary in activities where the athlete is required to use two or more parts of the body at the same time, such as striking the shuttle in badminton.

**Reaction time** – the time taken to initiate a response to a given stimulus. The stimulus may be visual, necessary in sport where a batsman is responding to the release of the ball from the bowler. The stimulus may be aural as in the reaction time between the starter firing the gun and the athlete moving out of the starting blocks.

Award [1] mark for correct definition for a component of fitness.

Award [2] marks for adequate analysis.

Award [3] marks for full analysis.

(3 × [3])

All other valid points will be given credit.

(AO1, AO3)

[9]

30

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4 (a) Outline the importance of safe practice for physical activity.

Answers may address some of the following points:

- Medical checks should be completed before starting any physical activity
- Appropriate warm-up and cool down are important to prepare the body for exercise and prevent injury
- Equipment should be checked to make sure it is safe and appropriate for use
- The area being used should be suitable and safe for all participants to use
- Clothing should be suitable for the intended activity, including footwear and any necessary safety equipment should be worn to protect the individuals
- Personal safety of the individual is important, the participants should be prepared for the activity and know what exactly they have to do. Individuals should be shown the correct techniques and observed appropriately.
- Rules of the game must be adhered to and can have a major impact on the safety of the players. Each game has its own set of rules or laws, these are connected to the type of equipment and competition involved and are designed to make the event safer and fairer.
- Some rules of an activity are there to make competition or performance safer. These rules often have a direct bearing on what is permitted, e.g. – in football two footed tackles are prohibited, in rugby high tackles are unsafe and illegal.

Award [1] mark for each relevant safety practice identified.

All other valid points will be given credit.

(4 × [1])

(AO1)

[4]

(b) As a coach, discuss the importance of risk assessment in relation to safe practice in a sport or physical activity.

Answers may address some of the following points:

- Risk assessment is a technique used by the coach for preventing accidents and ill health. This technique allows the coach to think about what could go wrong and devising ways to prevent problems.
- Risk assessment is good practice and is also a legal requirement which the coach needs to consider at all times.
- The risk assessment carried out by the coach examines the possible hazards that may occur, the risks involved, the likelihood of them happening and how the hazards could be prevented.
- As a coach, it is important that the risk assessments should be logged, kept and reviewed regularly to see if they are up to date, appropriate and to make sure that none of the details have changed.
- The coach should assess the likelihood of accidents happening. This would minimise any potential accidents that the coach would have control over and query anything that the coach would have concerns about. The coach would put all control measures into place to protect everyone.
- As a coach it is important to be aware of all emergency procedure protocols in the event of an emergency. First Aid procedures must be addressed by the coach to ensure that all participants needs are

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catered for if an accident occurs. Safety procedures are followed at all times to protect the participants as outlined in most cases by the Governing Bodies and Equipment manufacturers guidelines.

- As a coach it is vital to know the roles and responsibilities expected and that the participants are safe at all times, which would be part of the initial risk assessment.
- As a coach it is important to review the sessions, looking at the suitability of participants to the activities, the suitability of the site, facilities, venue used, and effectiveness of the risk assessment. This will enable the coach to review the strengths and areas for improvement in the session and adapting, where necessary, to meet the safety needs of all participants.

### Level 1 ([1]-[3])

#### Overall impression: Basic

- Basic knowledge and understanding of the importance of risk assessment in relation to safe practice in a sport or physical activity. Responses lack breadth and depth of understanding.
- Demonstrates a basic ability to discuss risk assessment in general, with simplistic statements, basic examples given with no application.
- Demonstrates a basic ability to discuss the effectiveness of carrying out a risk assessment, have limited information relating to a sport or physical activity.
- Quality of written communication is basic. The candidate makes a limited selection and use of an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

### Level 2 ([4]-[6])

#### Overall impression: Good

- Good knowledge and understanding of the importance of risk assessment in relation to safe practice in a sport or physical activity. Good responses given relating to a sport or physical activity.
- Demonstrates a good ability to discuss the importance of risk assessment in a sport or physical activity, using relevant examples with good explanations.
- Demonstrates a good ability to discuss the effectiveness of risk assessment in a sport or physical activity
- Quality of written communication is good. The candidate makes a reasonable selection and use of an appropriate form and style of writing. Relevant material is organised with some clarity and coherence. There is adequate use of specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently competent to make meaning clear.

### Level 3 ([7]-[8])

#### Overall impression: Excellent

- Excellent knowledge and understanding of the importance of risk assessment in relation to safe practice in a sport or physical activity. Detailed responses given relating to a sport or physical activity.
- Demonstrates an excellent ability to discuss the importance of risk assessment in sport or physical activity, using relevant examples with excellent explanations given.

- Demonstrates an excellent ability to discuss the effectiveness of risk assessment in a sport or physical activity.
- Quality of written communication is excellent. The candidate successfully selects and uses an appropriate form and style of writing. Relevant material is organised with a degree of clarity and coherence. There is extensive and accurate use of specialist vocabulary. Presentation, spelling, punctuation and grammar are of a high standard and ensure the meaning is clear.

[0] is awarded for a response not worthy of credit.

(AO1, AO3)

[8]

AVAILABLE  
MARKS

12

- 5 (a) Assess how **each** of the following factors can act as a barrier to participating in sport and physical activity.

AVAILABLE  
MARKS

Answers may address some of the following points:

Time

- Work/study or family commitments and domestic duties, trying to juggle priorities can make it difficult to find the time to participate in physical activity or the feeling of insufficient time to participate.
- Being too busy, lack of time can prevent people from being active, difficulty with the pressures of work/life balance.

Ability/Disability

- All people have different levels of ability, a perception that a person lacks the level of skill or ability as others might inhibit participation.
- Not having opportunities to access specific coaching to develop necessary skills, lack of early experience in sport may hinder someone getting involved in certain physical activities.
- Lack of understanding and awareness of how to include people with a disability in sport, limiting opportunities and programmes for participation, training and competition.
- Lack of accessibility to suitable facilities to meet the needs of all participants who wish to take part in regular physical activity or exercise.

Resources

- Financial difficulties in relation to lack of ability to pay for equipment, fees, membership and clothing making it difficult to afford to participate in some sports or physical activities.
- No concessions made for those that may need them to be able to join or participate in certain sports or physical activities.
- Lack of facilities or inadequate facilities to train or participate. Poor provision depending on location.
- Lack of coaching or access to coaching in specific areas can make it difficult for some people to gain skills and experience in certain sports or activities or to have the opportunity to move to the next level to progress.

Award [1] mark for key phrase, [2] marks for adequate assessment and [3] marks for full assessment.

All other valid points will be given credit.

(3 × [3])

(AO1)

[9]

- (b) Research shows that participation rates in Northern Ireland are among the lowest in the UK and are continually falling.

Discuss what are the possible long term sporting and social problems that may arise from an increasingly sedentary lifestyle.

Answers may address some of the following points:

Evidence from research is showing that there is an increase in sedentary behaviour – watching tv, using a computer, using the car for short journeys, sitting reading, or listening to music.

- Problems linked to obesity, the health risks become more dangerous and can include diabetes, high blood pressure, heart disease, early

mortality rates.

- Cardiac problems/heart disease – individuals will possibly have to limit what they can do. Difficulty with carrying out everyday tasks. Reliance on medical treatment and medication. Changing adults' behaviour could reduce premature death, illness and cost to society.
- More days off work/less productive work force. Unhealthy lifestyle is an invisible 'enemy' to business whose costs – productivity and turnover are affected. Companies are impacted as there is a 'cost' to pay when employees are off work sick. Unhealthy staff do not or cannot work to full potential.
- More/greater strain on the National Health Service and a growing health care budget. Research has shown that it is estimated that illness at work costs UK employers £12.2 billion a year, as a result of sick days taken. The government is trying to reduce the rising health care costs; research has revealed that money is being spent on treatment of diseases or disabilities that result from potentially changeable behaviours – poor diet, no exercise, smoking, alcohol abuse, and drug abuse. Changing adults' behaviour could save the NHS time and money which could be put to use elsewhere to have a positive impact on society.
- Reduction in sports pyramid leading to smaller numbers of people playing sports, which could eventually lead to fewer sports clubs. There is a need to encourage communities to be active, targeting all age groups, impacting on sustainability. Green spaces need to be protected, to provide areas to play. More physical activity initiatives need to be launched, encouraging mass participation.
- Less talent to select from which could impact on and effect elite sporting performance. In comparison to other countries, participation rates are low. If participation rates continue to fall, it is difficult to compete on the world sporting stage. It is important to address this issue as international sporting success helps generate pride and a sense of national identity and a 'feel-good factor'. It also boosts the profile of a sport and increases interest in participation.

### Level 1 ([1]-[4])

#### Overall impression: Basic

- Basic knowledge and understanding of what the possible long term sporting and social problems are and that may arise from an increasingly sedentary lifestyle.
- Demonstrates a basic ability to link social problems arising from an increase in people leading a sedentary lifestyle and the consequences associated with that.
- Demonstrates a basic ability to link an increase in people leading a sedentary lifestyle to the reduction in participation levels in sport and the potential problems which will arise from this.
- Quality of written communication is basic. The candidate makes a limited selection and use of an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

AVAILABLE  
MARKS

**Level 2 ([5]-[7])****Overall impression: Good**

- Good knowledge and understanding of what the possible long term sporting and social problems are and that may arise from an increasingly sedentary lifestyle.
- Demonstrates a good ability to link social problems arising from an increase in people leading a sedentary lifestyle and the consequences associated with that.
- Demonstrates a good ability to link an increase in people leading a sedentary lifestyle to the reduction in participation levels in sport and the potential problems which will arise from this.
- Quality of written communication is good. The candidate makes a reasonable selection and use of an appropriate form and style of writing. Relevant material is organised with some clarity and coherence. There is adequate use of specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently competent to make meaning clear.

**Level 3 ([8]-[10])****Overall impression: Excellent**

- Excellent knowledge and understanding of what the possible long term sporting and social problems are and that may arise from an increasingly sedentary lifestyle.
- Demonstrates an excellent ability to link social problems arising from an increase in people leading a sedentary lifestyle and the consequences associated with that.
- Demonstrates an excellent ability to link an increase in people leading a sedentary lifestyle to the reduction in participation levels in sport and the potential problems which will arise from this.
- Quality of written communication is excellent. The candidate successfully selects and uses an appropriate form and style of writing. Relevant material is organised with a degree of clarity and coherence. There is extensive and accurate use of specialist vocabulary. Presentation, spelling, punctuation and grammar are of a high standard and ensure the meaning is clear.

[0] is awarded for a response not worthy of credit.

(AO1, AO3)

[10]

19

**Total**

**100**

AVAILABLE  
MARKS