

CAMBRIDGE NATIONALS

Exemplar Candidate Work

SPORTS SCIENCE



J802, J812

R041 Summer 2019 series

Version 1

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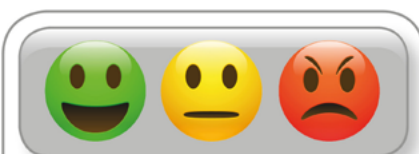
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Introduction

These exemplar answers have been chosen from the summer 2019 examination series.

OCR is open to a wide variety of approaches and all answers are considered on their merits. These exemplars, therefore, should not be seen as the only way to answer questions but they do illustrate how the mark scheme has been applied.

Please always refer to the specification <https://www.ocr.org.uk/qualifications/cambridge-nationals/sport-science-level-1-2-j802-j812/> for full details of the assessment for this qualification. These exemplar answers should also be read in conjunction with the sample assessment materials and the June 2019 Examiners' report or Report to Centres available from Interchange <https://interchange.ocr.org.uk/>.

The question paper, mark scheme and any resource booklet(s) will be available on the OCR website from summer 2020. Until then, they are available on OCR Interchange (school exams officers will have a login for this and are able to set up teachers with specific logins – see the following link for further information <http://www.ocr.org.uk/administration/support-and-tools/interchange/managing-user-accounts/>).

It is important to note that approaches to question setting and marking will remain consistent. At the same time OCR reviews all its qualifications annually and may make small adjustments to improve the performance of its assessments. We will let you know of any substantive changes.

Question 1

- 1 For each of the following extrinsic factors, explain how injuries can occur.

Coaching

.....

.....

.....

Environmental factors

.....

.....

.....

Equipment

.....

.....

.....

[6]

Exemplar 1

6 marks

- 1 For each of the following extrinsic factors, explain how injuries can occur.

Coaching

If the coach has poor communication and does not teach you the correct technique you may suffer an injury eg learning to tackle incorrectly in football, may perform 2 footed tackle with spikes up injuring other player.

Environmental factors

The weather is an environmental factor. If it is too hot an athlete may become dehydrated and collapse. They could also suffer with heat stroke.

Equipment

If the performance equipment is unsafe it could cause injury for example the bars in gymnastics may be unstable resulting in athlete falling and spraining their ankle. [6]

Examiner commentary

As stated in the mark scheme guidance, the candidate must provide more than just the factor in addition to the explanation to gain 2 marks in each sub-part of the question. For example, any of the named extrinsic factors (coaching, environment and equipment) on their own would be too vague.

This response succinctly explains the different ways that injury can occur through coaching, environmental factors and equipment. The response demonstrates an understanding of each factor and the candidate then develops their response further through the use of practical examples (coaching and equipment) or further detail (environment).

The coaching response clearly mentions 'poor communication' (Point 3 in the mark scheme) and 'does not teach you the correct technique' (Point 2 in the mark scheme). The candidate then develops this further by adding a practical example on learning to tackle incorrectly in football and performing a two-footed tackle. No further marks were awarded for this application but this would have been Point 2 in the mark scheme if any of the other points made were too vague or incorrect.

The environment response starts off too vague as 'the weather is an environmental factor' has not given enough detail. The response then gives the necessary detail required with 'too hot' (Point 7 in the mark scheme) and 'may become dehydrated' (Point 8 in the mark scheme). The candidate also gives another valid point linked to Point 8 in the mark scheme with 'heatstroke' but again this response has already secured the maximum number of marks available for this sub-part of environment.

The equipment response is another example of how the candidate uses applied knowledge through examples to secure maximum marks. 'The equipment is unsafe' is Point 15 in the mark scheme and is then further developed with 'the bars in gymnastics maybe unstable' (Point 16 in the mark scheme) and once again this is then further developed by 'the athlete falling' but once again this response has already secured the maximum number of marks available for this sub-part of equipment.

It is always good practice to use practical examples to support responses even if the question does not state the need to use them.

Exemplar 2

4 marks

- 1 For each of the following extrinsic factors, explain how injuries can occur.

Coaching

If you have been coached poorly it could lead to injury as you may have been taught the correct technique.

Environmental factors

If it has been bad weather and has been raining the surface you play on could be slippery and this could cause injury.

Equipment

If you do not have protective equipment on it could risk injury as that's what you need to have to reduce injury. You also need to have performance equipment so you can have the things for the sport otherwise injury will occur. [6]

Examiner commentary

This response has made some simple errors which have prevented the candidate from scoring more marks. The question asks about how injuries can occur and not about preventing injuries.

The response has gained one mark for 'coached poorly' (Point 1 in mark scheme) but then tried to develop this point by referring to how it can lead to injury by 'being taught the correct technique'. The questions and mark scheme requires reference to about how injury can occur so it was important the response developed it by referring to being taught the incorrect technique rather than the correct technique. This error might have been a mistake by the candidate by simply mixing up their words which is why it is always good practice to use practical examples as they might of referred to being taught a 'high tackle in rugby' which would have then gained a mark for Point 2 in the mark scheme.

The candidate has gained maximum marks for their response on the environment from different points within the mark scheme. They gained a mark for Point 7 in the mark scheme and 'bad weather' which was then further developed by linking it to the playing surface as slippery (Point 10 in the mark scheme).

The response for equipment only scored one mark for 'not having protective equipment' but referred to 'you need to have performance equipment' which again was about preventing injuries. The candidate need to develop their first point on protective equipment by possibly giving an example of a hockey player not wearing a gumshield (or equivalent Point 14) or refer to how performance equipment can cause injury to players by being hit with a hockey stick (Point 17 in the mark scheme) rather than just stating you require performance equipment.

Question 3

- 3 Individual variables are intrinsic factors which can influence the risk of injury. Name and describe **three** individual variables that might cause injury.

Individual variable 1

Description

Individual variable 2

Description

Individual variable 3

Description

[6]

Exemplar 1

6 marks

Individual variable 1 Sleep.....

Description not enough sleep means your head will be static and you will be unaware in basketball if someone tries to pass you the ball it could injure you as you were unaware it could cause contusions.

Individual variable 2 Gender.....

Description mixing gender in a sport such as rugby causes injury because boys have more body strength than girls and rugby is a contact sport it could cause fractures

Individual variable 3 Age.....

Description mixing 5 year olds and 18 year olds causes injury in a sport like football because it is a contact sport and the 18 year olds are more developed and stronger. [6]

Examiner commentary

This response gains a sub-max of 3 marks for identifying three individual variables and a further sub-max of 3 marks for correct descriptions.

Sleep is the first named individual variable which is Point 9 in the mark scheme. The candidate is then able to describe how sleep might cause injury by referring to 'being unaware' which is an equivalent of focus/concentration being affected.

Gender (Point 1 in the mark scheme) is the second named individual variable and the response correctly refers to an equivalent statement Point 2 in the mark scheme by suggesting that if boys play mixed rugby with girls then injury could occur as it is a contact sport and boys having more strength that could cause fractures.

Age (Point 3 in the mark scheme) is the third individual variable and again the response describes this by using a practical example of mixing 5 year olds with 18 year olds in football as it is a contact sport with the 18 year olds being more developed and stronger.

A common error with some responses relating to age is often answers are too vague as they simply refer to performers being older and/or younger. By giving specific ages that have a clear difference (both in terms of age and strength) this response ensures that it is not too vague which is then further qualified by using football as a contact sport.

Exemplar 2

3 marks

Individual variable 1 warm upDescription if you dont warm up you could pull a muscleIndividual variable 2 cooling downDescription if you dont cool down after doing any sport or exercise you could still have lactic acid in your body/bonesIndividual variable 3 ageDescription may be too young to be lifting heavy weights

[6]

Examiner commentary

This response has gained some marks as even though the individual variable was vague the description was correctly linked to an individual variable so credit was given. 'Warming up' and 'cooling down' are not individual variables within themselves so these points were marked too vague but credit was given to the first description of not doing a warm up can cause injury. The description linked to a cool down is a repeat of the same point made for a warm up in Point 16 of the mark scheme. Even though physical preparation is not a named individual variable in the specification credit was given to individual variables being linked with other intrinsic factors. As in previous years the mark scheme was extended to allow other intrinsic factors such as psychological and fitness/health factors to be classed as individual variables.

The response did score maximum of two marks when using 'age' which is a named individual variable from the specification and correctly described it as 'might be too young to be lifting heavy weights'.

It is recommended that centres use the specification to ensure candidates are familiar with the six named individual variables specifically named in the specification: gender, age, flexibility, nutrition, sleep and reoccurring/previous injuries.

Question 4

- 4 Asthma, Diabetes and Epilepsy are three common medical conditions that a sports performer might suffer from. Identify **two** symptoms for each medical condition that may affect performance.

Asthma

1

2

Diabetes

1

2

Epilepsy

1

2

[6]

Exemplar 1

6 marks

Asthma

1 coughing

2 shortness of breath

Diabetes

1 extreme thirst

2 going to the toilet a lot

Epilepsy

1 seizures

2 lip smacking

[6]

Examiner commentary

The candidate has given two different symptoms for each medical condition and has gained 2 marks for each. Some of the symptoms are simply one word answers which is fine as the question has asked to 'identify'.

Asthma – 'Coughing' (Point 4 in the mark scheme) and 'shortness of breath' (Point 1 in the mark scheme).

Diabetes – 'Extreme thirst' (Point 1 in the mark scheme) and 'going to the toilet a lot' (Point 2 in the mark scheme).

Other responses linked to Points 1 and 2 in the mark scheme were often too vague as they did not make it clear that there was an 'increase' (extreme has been classed as an equivalent) or 'more often' when referring to use of the toilet.

Epilepsy – 'Seizures' (Point 1 in the mark scheme) and 'lip smacking' (Point 6 in the mark scheme).

Exemplar 2

4 marks**Asthma**

- 1 ~~AAAA~~ wheezing and coughing
- 2 tiredness

Diabetes

- 1 extreme thirst
- 2 needing to go to the toilet a lot

Epilepsy

- 1 seizures
- 2 sensitive to light

[6]

Examiner commentary

It is important that when a question asks for a set number of responses and space is clearly given for the responses to be written the candidate offers their best two responses. The mark scheme states that the first response given on each line is to be marked to avoid candidates from offering many responses and scoring maximum marks through simply writing a list of responses.

This response has only scored one mark for asthma with 'wheezing' (Point 2 in the mark scheme) being the first response on the line. 'Coughing' although correct (Point 4 in mark scheme) has not been credited as the candidate has offered their second answer as 'tiredness' which is too vague to be credited as tiredness is linked to diabetes and not asthma.

The candidate scored maximum marks for identifying two symptoms of diabetes – 'extreme thirst' (Point 1 in the mark scheme) and 'needing to go to the toilet a lot' (Point 2 in the mark scheme).

One mark out of two was gained for the symptoms of epilepsy with 'seizures' (Point 1 in the mark scheme) correctly given but 'sensitive to light' is a trigger of epilepsy rather than an actual symptom and the mark scheme stated not to accept: Light sensitivity or equivalent.

Question 15

15* Jasminder has been appointed as a sports coach for her local community team.

Outline a suitable warm up that she may use, describing the five components with relevant examples, and describe the physical benefits the warm up may bring to the performers.

[8]

Exemplar 1

6 marks

Outline a suitable warm up that she may use, describing the five components with relevant examples, and describe the physical benefits the warm up may bring to the performers.

pulse raiser, this can involve jogging, walking or swimming and it should last for around 5 to 10 minutes, this part of the warm up increases heart rate which means there is more blood pumped to working muscles carrying oxygen and nutrients not only will this decrease injuries such as fatigue it will also improve performance as muscles will be able to work more effectively for longer. In a sport such as long distance running in athletics this will be useful as the next stage is mobility it prepares your muscles and body. The next stage is mobility this is where you take your joints through their full range of movements an example of this could be arm swings, this decreases the risk of injury as in a sport such as football and goalkeeping without the mobility stage you may over stretch and cause a strain or sprain, it also increases performance levels as your body is [8]

Q15. able to reach further.
the third stage is Dynamic movements
this stage involves a change in Speed
and direction for example jogging into
a sprint around zig zagged cones. not
only does this decrease injury as your
body will be prepared for sudden
~~time~~ change in direction and speed in
for example netball it will reduce
the risk of sprains and strains. It will
also improve performance as you will
have faster reaction and recovery
times.

The next stage is Stretching this
increases the flexibility and pliability
of muscles this means you will
decrease the risk of pulling a muscle
or strains and sprains an example
could be a quadricep stretch before
gymnastics as gymnastics requires high
flexibility levels. It also increases
performance as you will be able to
perform high flexibility moves in gymnastics.
The last stage is Skill rehearsal this

stage ^{involves practicing} ~~is~~ going over common tactics,
skills or movements used in a game
or sport for example dribbling
and shooting in basketball. This
will increase performance levels
because performers will be aware
of what tactics they should use

in a game such as football an example could be practicing where to shoot in a goal.

Examiner commentary

This is a comprehensive Level 3 response as it shows detailed knowledge and understanding that develops many of the points within the indicative content of the mark scheme. The response is well structured and consistently uses appropriate terminology such as named muscles with few errors in grammar, punctuation and spelling.

Using the Level 3 discriminators in the mark scheme:

- detailed knowledge and understanding of most warm up components (pulse raiser, stretching, mobility, dynamic movement and skill rehearsal)

This response shows detailed knowledge and understanding of all warm up components with several examples given for each. For example, this response has given a range of warm up activities such as jogging, walking and swimming and has developed it further by referring to the amount of time that could be spent on a warm up

- several physical benefits of a warm up are developed

This response has detailed the following:

- Increases heart rate, more blood pumped to working muscles carrying oxygen
- Decreased risk of injury with reference to examples of sprains/strains
- Increased performance levels
- Increased flexibility and pliability of muscles
- Clear and consistent practical application of knowledge and understanding to warm up

This response has used a wide variety of practical examples that could all be linked to a local community team including: - Long distance running in athletics, Football (specific reference to goalkeeping), Netball, Sprinting around zig-zagged cones, Gymnastics and shooting in basketball.

Exemplar 2

6 marks

A warm up should be a part of every activity routine. It is done before the activity. A warm up raises ~~the~~ the heart rate through the first component, Pulse raiser, which represents low intensity exercises such as jogging and running and helps a performer get feel ready. Mobility, the second component, ~~is~~ represents exercises that bring the joints to their full range of motion, increasing the performer's flexibility. The third component, Dynamic movement, helps the performer change speed and direction during a game and ~~can~~ is represented by exercises such as skipping, useful in netball. The fourth component, Stretching, which can be static or dynamic, lengthens the muscles of a performer, which lowers the risk of a muscle strain occurring. And finally, the Skill rehearsal represents practicing moves from the upcoming activity which helps the performer play better.

Examiner commentary

This is a competent Level 2 response that shows good knowledge and understanding with some developed points. It is a response that is reasonably well structured and uses some appropriate terminology (low intensity and flexibility). There are occasional errors in grammar, punctuation and/or spelling.

Using the Level 2 discriminators in the MS:

- satisfactory knowledge & understanding of some (3+) warm up components
- This response shows knowledge/understanding for all five components - pulse raiser, stretching, mobility, dynamic movement and skill rehearsal
- some physical benefits have been identified / developed and at least two physical benefits have been developed for the top of this level
- Increased flexibility
- Lowers risk of muscle strain
- Helps the performer play better
- some success in practical application of knowledge & understanding to warm ups
- There is some attempt at practical application through jogging/running as a pulse raiser but this could be developed further for the other components. Skipping in netball as an example of dynamic movement is too vague.

The response could be developed further with more development of physical benefits and more practical application. For example, when referring to the pulse raiser increasing heart rate this could then be developed by describing the effect of this on the body/ muscles with more blood and oxygen being delivered to the working muscles. Other examples for static and dynamic stretches, mobility and skill rehearsal would have been useful. This would have then developed the use of terminology further through named muscle stretches such as hamstring or quadriceps stretches.

Exemplar 3

4 marks

Jasminde would first start off with a pulse raiser, this will increase the performers heart rate. For example the performers could do short sprints or a little jog. After the pulse raiser Jasminde would get the performers to do some static stretching, this will be a little cool down for the performers after the pulse raiser. For example she would give the performers relevant stretches to the sport. Once the static stretching is done Jasminde would then move the performers on to dynamic stretching, this will help the performers loosen the joints and increase their heart rates again. After all these steps Jasminde would then move onto a skill rehearsal. This will [8]

15) be helpful to the performers because it gives them good practice and helps them improve their skills. For example if they are about to play a football match Jasminde would

split players into different groups for example the mid fielders would go in a group to practice dribbling and passing. The 4 attackers, defenders and goalkeeper would be together creating real game scenarios.

Examiner commentary

This is generally a competent Level 2 response that shows some good knowledge and understanding but with fewer developed points. It is a response that has some structure and at times uses some appropriate terminology (static/dynamic stretching and real game scenarios). There are some errors in grammar, punctuation and/or spelling.

Using the Level 2 discriminators in the MS:

- satisfactory knowledge & understanding of some (3+) warm up components
 - This response shows knowledge/understanding for three components - pulse raiser, stretching and skill rehearsal
- some physical benefits have been identified / developed and at the bottom of this level, one part of the question may be addressed very well while there is a lack of knowledge in the other part or both parts may have been addressed with some success
 - The components of a warm up have been reasonably well addressed but the physical benefits demonstrates a lack of knowledge with 'improving skills' for skill rehearsal the main development point of this part of the question. Terminology such as 'loosen joints' is a little vague.
- some success in practical application of knowledge and understanding to warm ups
 - There is some attempt at practical application through short sprints and a simple jog as a pulse raiser and dribbling and passing as suitable skills for skill rehearsal.

The response could be developed further with more development of physical benefits, more practical application and development of the warm up components such as describing that stretching can increase flexibility which in turn reduces the risk of injury. Mobility and dynamic movement could also have been added.

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