

CAMBRIDGE NATIONALS

Examiners' report

**SPORT
SCIENCE**

J802, J812

R041 January 2022 series

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Introduction

Our examiners' reports are produced to offer constructive feedback on candidates' performance in the examinations. They provide useful guidance for future candidates.

The reports will include a general commentary on candidates' performance, identify technical aspects examined in the questions and highlight good performance and where performance could be improved. A selection of candidate answers are also provided. The reports will also explain aspects which caused difficulty and why the difficulties arose, whether through a lack of knowledge, poor examination technique, or any other identifiable and explainable reason.

Where overall performance on a question/question part was considered good, with no particular areas to highlight, these questions have not been included in the report.

A full copy of the question paper and the mark scheme can be downloaded from OCR.

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R041 series overview

R041: Reducing the risk of sports injuries is the mandatory examination component for the OCR Level 1/2 Cambridge National Award (J802) and Cambridge National Certificate (J803) in Sport Science.

This component prepares candidates on how to reduce the risk of injuries occurring when participating in physical activity, how to react to common sports injuries and how to recognise the symptoms of some common medical conditions.

Candidates need to be prepared for a range of different question types so that they can respond equally well to true/false, multi-choice, completion of tables, short answer questions (ranging from a choice of command words such as identify, describe and explain) and the 'extended levels' response Question 15. Candidates who do well on this paper are also able to apply knowledge and have a good understanding using practical examples from different sports and physical activities.

Centres are reminded that mark schemes are used as a basis for judgements and each examiner's professional judgement is used in finally deciding the marks given based on a rigorous standardised procedure. Examiners use ticks to indicate the number of marks given for Questions 1 – 14.

Question 15 is always the extended response. This is assessed against the 'levels' part of the mark scheme. The mark scheme for this final question has a number of criteria separated into three levels. These levels also include statements related to the quality of written communication. The levels scheme also includes indicative content and this content is taken into consideration when awarding mark with examiners using the following annotations – K = knowledge point, DEV = development of knowledge, EG = use of applied practical example.

<i>Candidates who did well on this paper generally did the following:</i>	<i>Candidates who did less well on this paper generally did the following:</i>
<ul style="list-style-type: none"> • used relevant sporting examples even if the question did not ask for practical examples • applied knowledge and understanding using examples specific to the named practical activity: Q8 (b) (i) and (ii) • gave responses that focused on the command words in the question in relation to influencing injury (Q9) or causing injury (Q10) • offered alternative responses other than those given in the question and therefore did not repeat wording: Q6 • gave concise responses and clearly had the knowledge and application for specific questions: Q13 • responded to all parts of the level question and scored top of Level 2 and into Level 3 • offered responses for all questions. 	<ul style="list-style-type: none"> • confused acute and chronic injuries: Q1 and Q2 • did not follow the command words of the question – for example, not using the words or phrases listed (Q4), describing how the types of sporting activity can influence injury (Q9) or how factors can cause injury (Q10) • repeated answers or offered equivalent responses to those already given in question or question stem: Q6 • gave responses that were often too vague and/or lacking detail and/or did not answer the question: Q6, Q7, Q13 • were unable to use appropriate sporting equipment examples even when question was specific to a named sport such as cricket: Q8 (b) (i) and (ii) • did not offer responses for all parts of the question and/or did not make it clear which part of the question they were referring to: Q15 • were unable to offer responses for all questions leaving some as a no response.

<i>Most successful topic/question/set texts</i>	<i>Least successful topic/question/set texts</i>
<ul style="list-style-type: none">• Q1 (a) – (b) and Q2 (a) – (b): Acute injuries, Q1 (a), with an example, Q1 (b), and chronic injuries, Q2 (a), with an example, Q2 (b)• Q3: Parts of an Emergency Action Plan (EAP)• Q4: Asthma• Q6: Common symptom and treatments for epilepsy• Q7: Diabetes• Q8 (a) – (b): Protective and performance equipment, Q8 (a), and examples for each in cricket, Q8 (b) (i) and (ii)• Q11 (a) – (b): Injuries relating to poor posture, Q11 (a), and posture issues caused, Q11 (b) (i) and (ii)	<ul style="list-style-type: none">• Q9: Types of physical activity• Q10: Environmental factors• Q13: Some components of a warm-up with suitable examples• Q15: Soft-tissue and overuse injuries

Question 1 (a)

1 (a) Describe what an acute injury is.

.....
..... [1]

Many candidates had excellent knowledge of acute injuries and were able to describe an acute injury. There was good use of terminology such as 'impact from sudden trauma' resulting in 'immediate pain' which comprehensively describes an acute injury. Quite often responses would also give descriptions of how an acute injury occurs as well such as a tackle in football. The candidates that had this level of knowledge were then set up to score the mark for Q1 (b) and able to give a correct example. Some candidates referred to acute injuries as those that 'happen straight away' or 'quickly' which were marked as BOD (benefit of doubt).

A small number of candidates confused acute and chronic injuries meaning they scored no marks for Q1 or Q2. Other candidates referred to the amount of time a performer could be out injured with an acute injury such as 'short-term injuries' which is too vague as some acute injuries such as fractures can keep performers from playing for a few months. Other candidates that did not score on this question sometimes gave a cause of an acute injury and/or gave an example rather than giving a description.

Question 1 (b)

(b) Give an example of an acute injury.

..... [1]

Fractures / broken bones were most common responses although a wide range of acute injuries from the specification were also used such as abrasions, cuts and bruises. Other candidates scored marks for using acute injuries that are not named on the specification such as dislocations. Some candidates that did not score a mark gave causes such as a high fall or in a tackle rather than actually naming an example of an acute injury.

Question 2 (a)

2 (a) Describe what a chronic injury is.

.....
 [1]

Many candidates had excellent knowledge of chronic injuries and were able to describe a chronic injury. There was good use of terminology such as chronic injuries being 'overuse injuries' or injuries that 'developed over a period of time'. As with the acute injury responses many candidates would also give descriptions of how chronic injuries can occur such as repetitive actions. The candidates that had this level of knowledge were then set up to score the mark for Q2 (b) and able to give a correct example.

As mentioned in Q1 (a), a small number of candidates confused their knowledge between acute and chronic injuries and so referred to chronic injuries occurring through sudden trauma which is incorrect. Other candidates referred to the amount of time a performer could be out injured with chronic injuries such as 'long-term injuries' which were too vague to gain credit. Other candidates that did not score on this question sometimes gave a cause of a chronic injury and/or gave an example rather than giving a description.

Question 2 (b)

(b) Give an example of a chronic injury.

..... [1]

Tennis elbow and shin splints were most common responses although other chronic injuries from the specification were also used such as tendonitis. Some candidates gave chronic injuries that are not named on the specification but worthy of credit such as runners' knee and swimmers' shoulder. Some candidates that did not score a mark gave causes such as a running or playing tennis too much rather than actually naming an example of a chronic injury.

Question 3

3 Name the **three** areas that need to be addressed in an Emergency Action Plan.

1 [1]

2 [1]

3 [1]

This was reasonably well answered with many candidates scoring two marks. Quite often candidates that did not score maximum marks gave 'Emergency Contact' for 'Emergency Communication' which is an example of that particular EAP. This was also an issue across other EAP parts with examples being given rather than naming the actual part of the EAP. Typical examples and therefore vague responses included first aider or coach for personnel, stretcher and first aid kit for equipment and call emergency services / 999 / contact details for communication. Some candidates listed different components of SALTAPS, extrinsic and intrinsic/individual variables with reference to risk assessments which were incorrect and others named actual body parts such as arms and legs which scored no marks.

Question 4

4 Complete the following, selecting the most accurate words or phrases listed in the box below.

Jane suffers from asthma which means, when she is participating in sport, she sometimes has symptoms of or
 When she suffers an asthma attack, her coach knows to give her and
 If it is particularly bad, he might

- an inhaler
- increased thirst
- wheezing
- call the emergency services
- weight loss
- tightness in the chest
- reassurance
- sugar
- put her in the recovery position

[5]

This was a very well answered question with many candidates scoring maximum marks. A number of candidates did not follow the instructions in the question and used their own descriptions, which were marked incorrect as the question clearly states 'using the most accurate words or phrases in the box below'. Some candidates confused their knowledge of medical conditions and used the words / phrases that are linked with diabetes (increased thirst, weight loss and sugar) rather than asthma. A common error was using 'put them in the recovery position' as a treatment for an asthma attack.

Exam command words

Candidates are reminded that they need to follow the instructions in the question. For Q4 this was clearly to select the most accurate words or phrases from those in the box only.

Question 5

- 5 Hypoglycaemia is also known as high blood sugar. Is this **true** or **false**? Circle your answer.

True / False

[1]

A very small number of candidates are still leaving such questions blank and not offering an attempt at a true or false question. Responses for this question were mainly split. Hypoglycaemia is where the level of sugar (glucose) in blood drops too **low** – the correct response therefore is 'false'.

Specification – LO4 – Medical conditions

An understanding of the technical vocabulary that is stated in the specification is crucial if candidates are to perform well in this examination.

Question 6

- 6 Ben is having an epileptic fit. Other than fit/seizure, give **one** other symptom and describe **two** ways in which you might respond to him.

Symptom: [1]

Response:

1

.....

2

..... [2]

Many candidates showed a good knowledge of symptoms and responses for epilepsy. Some candidates did not score for their symptom responses as they simply repeated responses of seizure or fits or equivalent descriptions which was a symptom already given in the question stem. Fewer candidates are now incorrectly referring to 'flashing lights' as a symptom which has been an issue on previous series. This is often a cause for epilepsy and not a symptom.

A number of candidates that did not score maximum marks were generally too vague with their description of how they would respond to the epileptic fit. A common error is not stating when they would put the person in the recovery position. It is important that people who are having an epileptic fit are put in the 'recovery position **after** the fit'. It is pleasing to read many systematic responses that detail what responses would be from the start of the fit up to the point of calling emergency services – such responses included -. Let them fit and make the area safe, cushion their head and time the fit followed by calling emergency services.

Some responses were also too vague as they referred to using AEDs. The question asks 'how you might respond to him' and students would not be medically trained to administer medication or equivalent.

Question 7

7 Explain the symptoms of type 1 and type 2 diabetes.

.....
.....
.....
..... [2]

Many responses described how people get Type 1 and Type 2 diabetes rather than explaining the symptoms. Few candidates offered full responses that explained the symptoms of diabetes such as high blood sugar levels due to lack of or no insulin in the body. Responses that were simply descriptions were given a BOD in this instance, but it is important that candidates always attempt to follow the command word in the question. Some responses were too vague when referring to blood sugar levels as candidates simply stated sugar levels being too low or high with no reference to **blood**. The most common responses were increased thirst, frequent trips to the toilet, weight loss, fatigue and dizziness.

Exemplar 1

7 Explain the symptoms of type 1 and type 2 diabetes.

Type 1 Diabetes is more dangerous because you can end up losing a leg. And Type 2 diabetes is not too serious but it means that you have too much sugar in your body. [2]

This response scored no marks. The candidate has attempted towards the end of their response to describe blood sugar levels but have been too vague and simply mentioned 'Type 2 diabetes... means that you have too much sugar in your body'.

Question 8 (a) (i) (ii) (iii)

8 (a) State whether the following pieces of equipment are **protective** or **performance**.

(i)



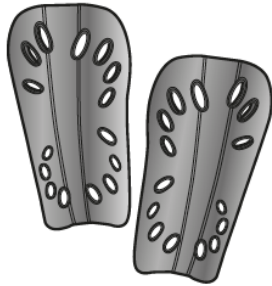
.....

(ii)



.....

(iii)



.....

[3]

This was very well answered, although a small number of students stated (i) goggles for performance and (iii) shin pads as performance.

Question 8 (b)

(b) Identify **one** piece of protective equipment and **one** piece of performance equipment used in cricket.

(i) Protective [1]

(ii) Performance [1]

Overall this question was very well answered. Candidates that may have less understanding of cricket were able to access the mark scheme and scored marks for helmet (protective) and bat (performance). Some candidates did not read the question properly and gave examples for performance equipment in relation to other sports such as tennis racket and hockey stick and so did not score any marks.

(i) Helmet was the most common response for protective followed by guards and pads.

(ii) Bat was the most common response with some opting for ball.

Exam command words and scenarios

Candidates are reminded that when specific activities are given in a question their responses must match the given activity, in this case cricket.

Question 9

9 Using an example, explain how the type of sporting activity might influence the risk of injury.

.....
.....
.....
.....
.....
.....
..... [2]

This question was less well answered. Some responses referred to other extrinsic factors such as poor communication and coaching, type of activity and equipment. Candidates that had knowledge of contact or non-contact activities and used that as their opening response followed by how that particular activity can then cause or have less chance of injury taking place scored maximum marks. Candidates that did not score maximum marks often repeated the wording in the question such as 'rugby is a contact sport and tackling can influence injury'. This type of response is too vague as they have not explained how the type of sporting activity either can cause or help reduce the chances of injury occurring.

Exemplar 2

- 9 Using an example, explain how the type of sporting activity might influence the risk of injury.

because if you're doing a contact sport that will influence the risk of injury because it involves ~~and~~ contact. For example rugby and netball, rugby is a very physical contact sport but netball is a non contact sport and rugby involves tackling netballs interceptions. [2]

This response scored one out of two marks. The candidate has scored a mark for stating that rugby is a contact sport (sub-max reached - S) but while the candidate states that netball is a non-contact sport (REP - mark already given for example of activity). Even though there is reference to tackling there is no actual reference to more or less risk of injury therefore no second mark (how the activity influences injury). The candidate in their opening response also simply repeats the wording in the question '...that will influence the risk of injury....'.

Exam command words and exam technique

Candidates are reminded that responses need to answer the question. Responses that simply repeat the wording of 'influencing injury' will be unlikely to attract marks.

For Q9 there was a need to explain how the type of activity (e.g. contact or non-contact) can either help cause or prevent (influence) injury.

Question 10

10 Name **three** environmental factors and describe how they can cause injury.

Factor 1:

Cause:

.....

Factor 2:

Cause:

.....

Factor 3:

Cause:

.....

[6]

This question also caused some candidates difficulties as their responses referred to other extrinsic factors such as poor communication and coaching, type of activity and equipment rather than focusing on the environmental factors. The specification clearly separates environmental factors as weather, playing surface and/or surrounding/performance area and other participants. Once again there was a need for candidates to describe how the factor can cause injury. Responses that simply stated weather conditions such as rain or fog are too vague unless the response then mentioned the rain causing the players to slip or the fog causing players to run collide into others or pieces of equipment. Some named factors were too vague as they were examples of the factor such as extreme heat / cold temperatures for weather and field / floor / pitch for playing surface.

Specification – LO1 – Extrinsic factors

An understanding of the technical vocabulary that is stated in the specification is crucial if candidates are to perform well in this examination.

Question 11 (a)

11 (a) Draw a line linking each of the injuries related to poor posture to their correct description.

injuries related to poor posture		Description
Lordosis		Where the spine twists and curves to the side
Kyphosis		Abnormal curvature of the spine in the lower back
Scoliosis		A curvature of the spine that causes the top of the back to appear more rounded than normal

[3]

This was generally well answered, and many candidates had the knowledge to match the injury related to poor posture to the appropriate description. An incorrect response for one injury automatically would mean another response would be incorrect. Some candidates linked each injury to more than one description and were marked too vague.

Question 11 (b) (i)

(b) Poor posture can be caused by a variety of factors. What posture issues can be caused by the following factors?

(i) Hunching your shoulders when standing.

.....
 [1]

This was very well answered with round shoulder being the most common response.

Question 11 (b) (ii)

(ii) Slouching on the sofa.

.....
..... [1]

This was very well answered with lordosis / kyphosis the most common responses.

Specification – LO1 – Sports injuries related to poor posture

An understanding of the technical vocabulary that is stated in the specification is crucial if candidates are to perform well in this examination.

Question 12

12 During a warm-up athletes gain many physical and psychological benefits.

Identify whether the following statements are **true** or **false**.
For each statement circle your chosen answer.

- (a) A warm-up increases body temperature. True / False
- (b) A warm-up increases concentration. True / False
- (c) A warm-up increases nerves. True / False
- (d) A warm-up increases blood flow and carbon dioxide to muscles. True / False

[4]

Overall, candidates displayed a very good knowledge of physical and psychological benefits of a warm-up. Statement (d) was the one that many candidates seemed to give an incorrect response.

Question 13

13 Name the **five** key components of a warm-up, giving an example for each.

1 Component

Example [2]

2 Component

Example [2]

3 Component

Example [2]

4 Component

Example [2]

5 Component

Example [2]

For many candidates who had the knowledge of warm-up components and an idea of appropriate examples this was a straightforward response and they scored maximum marks. This was often achieved by short one or two word responses. Some candidates are still confusing dynamic movement and mobility examples. Other candidates that did not score maximum marks did at least one of the following:

- referred to psychological aspects such as mental rehearsal as one of the components
- gave descriptions of the benefits such as more oxygenated blood being delivered to working muscles for pulse raiser rather than 'gentle / slow jogging'
- repeated stretching with 'static' and 'dynamic' stretching
- confused dynamic stretching with dynamic movement.

Exemplar 3

13 Name the **five** key components of a warm-up, giving an example for each.

- 1 Component pulse raiser
 Example To get your pulse raising, body temperature higher [2]
- 2 Component Mobility
 Example To get the blood flowing [2]
- 3 Component Dynamic movement
 Example To get your muscles ready, less risk of injury [2]
- 4 Component stretching
 Example To increase injury to relax your muscles [2]
- 5 Component skill rehearsal
 Example Get your mind into the game, mental and physical. [2]

This response scored five out of ten marks. The candidate has scored five marks for correctly naming the five key components of a warm-up. For the second part of the question that required an example to be given for each component, unfortunately the candidate has given the benefits of the component without actually giving any examples.

Specification – LO2 – Key components of a warm-up

An understanding of the technical vocabulary that is stated in the specification is crucial if candidates are to perform well in this examination.

Question 14

14 Describe **two** individual or group characteristics that a warm-up and cool-down must consider.

- 1
- 2

[2]

Candidates showed good knowledge of individual or group characteristics that a warm-up and cool-down should consider with age, fitness levels and injuries the most common correct responses. Candidates that did not score on this question often misread the question as they gave responses linked to benefits of a warm-up and benefits of a cool-down. Some responses were incorrect as they referred to gender which is not something that needs to be taken into consideration on its own, however, if responses then described specific fitness components such as strength or flexibility of performers then this was given a mark.

Exemplar 4

14 Describe **two** individual or group characteristics that a warm-up and cool-down must consider.

- 1 warm up should always include your heart rate and body temperature
- 2 cool down should always consider gradually increase heart rate and body temp.

[2]

This response scored no marks. The candidate has attempted to give benefits of a warm-up and cool-down rather than describing the individual or group characteristics that need to be considered.

Question 15

15* Describe the different types, causes and treatment of common soft-tissue and overuse injuries.

.....

.....

.....

.....

.....

.....

..... **[8]**

This question is marked using a levels mark scheme and the quality of written communication is taken into consideration. Many candidates demonstrated a fluent and well-planned response, others less so and showed a lack of overall structure and grammatical / spelling accuracy. The better responses referred to all parts of the question – the different types, causes and treatments for soft-tissue and overuse injuries.

A number of candidates impressed through their knowledge and understanding of this part of the specification. The lower scoring candidates sometimes confused soft and hard tissue injuries and gave responses linked to fractures. These candidates were also too vague in their responses and rarely developed their points on any parts of the question with limited types, causes and treatment methods. It is important for candidates to carefully read the question and identify exactly what is required by the question.

Candidates that showed a good understanding of soft-tissue and overuse injuries along with a range of treatment methods that moved away from repetition of RICE treatment were well prepared by their centres using the injuries and treatment methods listed in the specification. Some more developed answers included explanations of other types of chronic injuries including Osgood Schlatter's and Sever's disease along with other chronic injuries not listed in the specification such as runners' knee.

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