

## **CAMBRIDGE NATIONALS**

*Examiners' report*

# ***SPORT SCIENCE***



**J802, J812**

## **R041 Summer 2019 series**

Version 1

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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. 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 can be downloaded from OCR.

## Paper 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.

To do well on this paper, candidates need to apply knowledge and understanding using practical examples from sport and physical activity. 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 and extended answer questions.

More candidates are producing much more informed answers when responding to certain parts of the specification that have caused some difficulties in previous years. Candidates appear to be more familiar with terminology taken directly from the specification such as individual variables although such terms do still cause lower ability candidates difficulties.

It is important to note that many candidates in questions that require a description and an example or sporting situation are failing to do this. This series the questions did not give any responses within the stem so candidates had full access to the mark scheme. However, there is often substantial repetition in some questions, with candidates simply repeating the same or similar phrases. As an illustration; breathing difficulties and breathlessness or shortness of breath would only be worth 1 mark as a symptom of asthma.

Centres are reminded that marking 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.

R041 includes one extended response question that is always Question 15. 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 levels. These levels also include statements related to the quality of written communication. The levels scheme also includes indicative content that is expected in the question and this content is taken into consideration when awarding marks.

***Candidate performance overview***

Candidates who did well on this paper generally did the following:

- produced clear and concise responses
- applied knowledge and understanding using examples or sporting situations, when this was a requirement of the question: Q8a-d, Q14
- answered both parts of the question, when this was a requirement of the question: Q15
- matched the amount of knowledge to the number of marks in the question: Q1, Q12
- produced detailed responses when answering questions that required description: Q3, Q10.

Candidates who did less well on this paper generally did the following:

- produced responses that lacked depth: Q1, Q3, Q10, Q12
- did not have sufficient knowledge to give more than one different response: Q1
- lacked an understanding of the extended response: Q15
- did not read questions properly and did not apply to practical examples or sporting situations: Q8a-d, Q14
- did not understand technical terms taken directly from specification: Q7, Q9.

***Most successful topics/questions***

- Q5: Treatment of medical conditions
- Q6: Acute and chronic injuries
- Q11: Specific needs for warm up/cool down
- Q13: Warm up benefits

***Least successful topics/questions***

- Q2: Minimising risk
- Q3: Individual variables
- Q7: Cramp
- Q9: Emergency Action Plan
- Q10: On-field assessment routine
- Q14: Cool down

## Question 1

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

Coaching

.....

.....

.....

Environmental factors

.....

.....

.....

Equipment

.....

.....

.....

[6]

This question could have been answered in a couple of ways in order to secure maximum marks. The better responses explained how injury could occur from these extrinsic factors and often used practical examples to support even though there was no mention of using practical examples in the question. Other candidates simply gave one point but did not develop the point further – in this instance these candidates were often scoring half marks.

## Exemplar 1

## Coaching

If a coach fails to adhere to rules and regulations and there is insufficient communication. For example, if a player does not know how to enter a tackle in rugby properly then they will get injured or cause injury to the other person causing a fracture possibly.

## Environmental factors

If the weather is too hot, participants will get sun-stroke and may faint. If the weather is rainy or too

icy, then surfaces may become slippery which increases the chance of falling and injuring the body. For example, on a football pitch could cause a sprain.

## Equipment

If safety equipment may be too big / too small and therefore would rub against the person, causing further injury. If it is faulty, then it won't protect the required area. For example, a helmet in cycling may be too big and cause abrasion if it rubs. Clothing / footwear may also be too small and rub, such as studded boots in football. [6]

This response clearly explains different ways that injury can occur through coaching, environmental factors and equipment. For each extrinsic factor the response gives more than enough explanation through the use of practical examples and explanation of additional points within the mark scheme to score a sub-max 2 marks for each factor. It is good practice to use practical examples to support responses even if the question does not state the need to use them.

## Question 2

- 2 Name **three** activities performed to minimise the risk of injury from safety hazards.

1 .....

2 .....

3 .....

[3]

Many candidates found naming the three activities performed to minimise the risk of injury from safety hazards difficult. Many responses simply gave answers that named actual activities such as listing three sports such as football, hockey and rugby. Some candidates repeated similar responses such as equipment, weather and player checks or were simply too vague in their response and just named words such as equipment and weather. Other responses identified warm up and cool downs as activities to minimise the risk of injury from safety hazards and although these activities do minimise the risk of injury before and after physical activity they do not influence the risk of injury from actual safety hazards.

## 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]

Some candidates showed good knowledge of three individual variables and then went on to describe how they may cause injury. These candidates had obviously been well prepared by centres using the variables listed in the specification. Some excellent answers included accounts of how age, gender, nutrition, sleep and previous injuries might cause injury.

Some candidates misunderstood the nature of individual variables and commented about the environment or equipment which are clearly extrinsic factors. Others gave responses incorrectly linking the size of the group as an individual variable.



## 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]

Many candidates identified at least two symptoms of the three medical conditions.

Asthma - The most common symptoms that candidates referred to were coughing, wheezing, breathing difficulties and a tight chest.

Diabetes – The most common symptoms that candidates referred to were going to the toilet lots, extreme thirst and tiredness.

Some candidates were too vague in their descriptions by simply writing 'thirsty' or 'hungry'. Other vague simply wrote the word 'toilet' or did not include 'blood' when responding with 'high or low blood sugar levels'.

Epilepsy - The most common symptoms that candidates referred to were seizures or fits and foaming at the mouth.

Some candidates were too vague in their response as they referred to the possible triggers that can cause epilepsy such as 'flashing lights'.

Candidates that responded with different symptoms usually scored maximum marks. Some candidates repeated their first response but in a slightly different way. For example, a candidate that gave breathing difficulties as their first response and struggling to breathe as their second response would only score one mark.

Centres are reminded that in questions that ask for a specific number of responses only the first response on each numbered line will be marked.

## Question 5

5 How would you treat the following medical conditions?

Asthma attack .....

.....

Diabetes .....

.....

Epilepsy .....

.....

[3]

This question was answered very well by the majority of candidates many of which showed a detailed and sympathetic understanding in particular when treating epilepsy. The majority of candidates scored for giving the following treatments:

Asthma attack – inhaler or reassure.

Diabetes – use of sugar or insulin.

Epilepsy – a variety of correct responses was used for the treatment of epilepsy ranging from the start of the treatment by making the area and/or the participant safe by placing a pillow under their head to the end of the treatment by placing them in the recovery position after the seizure.

Sometimes candidates referred to calling emergency services for all three medical conditions which was given 1 mark maximum. Some candidates are also still referring to calling 911 which is too vague. Candidates are still using the recovery position for epilepsy without referring to 'after' the fit has happened to secure the mark.

Candidates that did not score maximum marks here were either too vague or confused treatments with the wrong medical condition such as giving sugar to treat epilepsy.

## Question 6

6 Decide whether the following injuries are 'chronic' or 'acute'. (Circle your chosen answer.)

- |                                |                 |
|--------------------------------|-----------------|
| (a) Osgood–Schlatter's disease | chronic / acute |
| (b) Tennis Elbow               | chronic / acute |
| (c) Open Fracture              | chronic / acute |
| (d) Abrasion                   | chronic / acute |
| (e) Concussion                 | chronic / acute |
| (f) Achilles Tendonitis        | chronic / acute |

[6]

A good number of candidates scored maximum marks on this question but others were making some incorrect associations between chronic and acute injuries. The most common misconception was that concussion is a chronic injury.

It is important that candidates follow the instructions in the question and 'circle their chosen answer' as some candidates made it difficult to read what they wanted the examiner to actually mark as their correct response and had crossed out or put lines through answers and/or drew lines from the injury to the chronic/acute responses.

## Question 7

7 Explain the term 'cramp'.

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

Candidates generally struggled with the wording of the term 'cramp'. Those candidates that did score the mark generally referred to the term 'muscle spasm' to gain the mark.

## Question 8 (a), (b), (c) and (d)

- 8 For each of the following treatment methods, choose the most appropriate injury from the list below. Give a sporting situation where each injury might occur.

**Fractured arm**

**Blister**

**Abrasion**

**Fractured leg**

**(a) Sling**

Injury: .....

How it might occur: .....

[2]

**(b) Bandage**

Injury: .....

How it might occur: .....

[2]

**(c) Cushioned Plaster**

Injury: .....

How it might occur: .....

[2]

**(d) Splint**

Injury: .....

How it might occur: .....

[2]

Many candidates were able to choose the most appropriate injury based on the treatments given. It was important for candidates to consider the treatment methods and select the most appropriate injury. For example, even though a cushioned plaster could be used to treat an abrasion the most appropriate injury when considering all four injuries left the bandage for the abrasion and the cushioned plaster for the blister.

The main reason why candidates did not score maximum marks was often through the lack of a clear sporting situation to describe how the injury might occur. Many responses were linking the injuries to falling but did not apply it to a sporting context as the question asked and so were too vague to be given a mark. This was particularly evident for Q8c with poorly fitting shoes or equivalent being given but with no practical context.

Q8d was the most common response where a sporting situation had been applied with a two footed tackle in football being widely used. It was not uncommon for some candidates to fail to give sporting situations for Q8a-c but then apply it for Q8d.

## Question 9

- 9 Name the part of an Emergency Action Plan (EAP) that the following are examples of:

First Aider: .....

Telephone: .....

Stretcher: .....

**[3]**

Candidates either answered this well or gave descriptions to the words rather than naming the actual part of the Emergency Action Plan (EAP). Candidates that had knowledge of the EAP knew that the three parts of the EAP are Emergency Personnel, Emergency Communication and Emergency Equipment. Other candidates described what a first aider would do with an injury, who they would telephone and how the stretcher would be used when treating injuries. Some candidates were referring to 'Emergency Contact' rather than 'Emergency Communication' as the specific part of an Emergency Action Plan and as stated in the specification and some candidates were confusing the different parts of the Emergency Action Plan.

## Question 10

- 10 Describe each of the following elements of the on-field assessment routine.

Active: .....

.....

Passive: .....

.....

Strength: .....

.....

**[3]**

Many candidates lacked sufficient enough detail when answering this question and were not clear who was actually moving the injured limb. Other errors included getting 'active' and 'passive' the wrong way around or simply not referring to the movement of an injured limb and simply writing 'moving it themselves'. Other vague responses for 'strength' included 'put strength on the injury' which simply repeats the wording in the question.

## Exemplar 2

Active: can the player move the injured part themselves.  
Passive: ~~can~~ how far you can move it for them until it hurts them.  
Strength: can they use strength and apply pressure to injured area. [3]

This response has scored 2 out of 3 marks. They have clearly distinguished who is moving the injury for active and passive elements of SALTAPS by linking 'active' to the injury being moved by themselves and 'passive' to moving the injury for them. The response for 'strength' is too vague as they repeated the term strength and referred to applying pressure to the injured area – this is too vague because this may imply pressing down on an injury as you would when treating a cut.

## Question 11

- 11 Which **one** of the following is **not** a specific need that must be considered when doing a warm up or cool down? (Circle your chosen answer.)
- (a) Height of the participant
  - (b) Age of the participant
  - (c) Fitness level of the participant
  - (d) Experience of the participant

[1]

Most candidates scored the mark and correctly identified 'A' as the correct response. It is clear to see in some candidate responses an element of thought processing. Candidates sometimes use annotations to identify any responses that can be discounted. These candidates then get to the correct answer through a process of elimination.

## Question 12

12 Explain how a warm up might be of psychological benefit to a performer.

.....

.....

.....

.....

.....

..... [3]

Candidates generally did well on this question and appear to have improved their knowledge and understanding on this topic as this topic area was an area for development in May 2018.

Candidates have improved their exam technique and rather than simply mentioning the psychological terms such as motivation or arousal which would be too vague they have developed their response by detailing the benefits. For example, an increase in motivation, raised confidence or control of arousal were largely included in candidate responses this series.

Some candidates are still confusing the words 'psychological' and 'physiological' with some candidates giving detailed descriptions of physical benefits and could not therefore score marks.

Other candidates did not score maximum marks either due to not having the exam technique to realise they needed to make three different points, did not have sufficient knowledge or repeated similar points in the mark scheme.

## Question 13

13 Answer the following statement by circling your chosen answer.

A warm up decreases blood flow and oxygen to muscles.

True / False

[1]

This was well answered by the majority of candidates who correctly identified that a warm up does not decrease blood flow and oxygen to muscles.

## Question 14

**14** Name **two** elements of a cool down, giving an example for each.

1 .....

Example .....

2 .....

Example .....

**[2]**

Some candidates did not give a response to both parts of the question and either named the element without giving an appropriate example or giving an example without naming the element.

## Question 15

**15\*** Jasminde 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]**

This question is marked using a levels mark scheme and the quality of written communication is taken into consideration. Many candidates showed a reasonable and organised response, others less so and showed a lack of overall structure and grammatical / spelling accuracy. The good candidates made good points about the majority of the warm up components and then went on to detail those points using relevant examples. Those that covered most components along with a good description of the physical benefits scored well. Many candidates impressed through their knowledge and understanding of this part of the specification.

The lower scoring candidates got confused and struggled to differentiate between the different warm up components in particular when attempting to describe mobility and dynamic movement with either the incorrect description or example being given. These candidates were also too vague in their responses and rarely developed their points or did not describe the physical benefits the warm up may bring to performers.

It is important and good practice for candidates to carefully read the question and identify exactly what is required by the question and for them to highlight or underline the variables that must be addressed in their responses.



## Exemplar 3

In this answer, I will outline a suitable warm up a coach may use and describe the components and examples and the physical benefits.

The five components of a warm up are: Pulse raiser, Skill rehearsal, dynamic movements, mobility and stretching (dynamic and developmental).

A pulse raiser for rugby may be light jogging around a pitch and for cycling it may be gentle cycling. For skill rehearsal, a participant would practise <sup>common</sup> patterns and skills <sup>specific to the</sup> sport. For example, in football, it may be dribbling. For dynamic movements, a participant would do exercises that make <sup>them</sup> change speed and direction. For example, shuttle runs and running in and out of cones. For mobility, a participant would do exercises that take the joints through their full range of motion/movement. For example arm and hip swings. For stretching, a participant could do dynamic stretching such as open and close the gate which loosens up the muscles to reduce injury.

The physical benefits of a warm up are: <sup>it</sup> raises heart rate and body temperature and the muscles become warmer which reduces the risk of injury. <sup>tendons</sup> the muscles and ligaments become more pliable and the muscles and joints become more flexible - reducing the risk of <sup>injury</sup> it increases the speed of muscle contraction and increases <sup>the circulation of</sup> blood flow and <sup>circulation</sup> so more oxygen can get to the muscles. The muscles also loosen up to allow more free movement. [8]

## END OF QUESTION PAPER

In conclusion, a suitable warm up benefits the performers because they improve <sup>prepare</sup> physically which reduces the risk of injury and helps them perform at the highest level they can so they are not restricted in their movement.

This is a comprehensive Level 3 response that shows:

1. Detailed knowledge and understanding of all warm up components (pulse raiser, stretching, mobility, dynamic movement and skill rehearsal).
2. Makes many developed points and answers both parts of the question (warm up components and physical benefits).
3. It is well structured and consistently uses appropriate terminology.
4. There are few errors in grammar, punctuation and spelling.
5. It has a clear and consistent use of practical application.

It is recommended that candidates use the extra paper if they are writing more rather than writing and squashing everything together.

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