



# Mark Scheme

## Cambridge National in Sport Science R180:

Reducing the risk of sports injuries and dealing with common medical conditions

**Please read before distributing to students.**

### Purpose of this document

This document and the associated question paper are based on the data analysis performed by The EverLearner Ltd. Please note that:

- We believe this paper has a very strong association with the actual external exam in 2024 in relation to command terms, skills, AO distribution, extended writing requirements and topics.
- However, this is categorically NOT a mark scheme for a predicted paper. No one can accurately predict an exam paper and we make no claim to this end.
- It is vital that you only use this document internally in your school/college. Publishing the document online or sharing it in any other way is strictly prohibited as this will undermine the potentially educational experiences of students in other schools/colleges.
- Finally, please check the publication dates of the model answers for this paper as well as the associated revision session in January.

### This mark scheme contains:

- Copy of each question for reference
- Marking guidance where appropriate
- Marking points containing alternative acceptable responses plus relevant assessment objective

### How should schools use this mark scheme?

The mark scheme has been constructed specifically for the exam paper used in The EverLearner's National Mock Exams from 2023. The model answers will be available on the 28th April and some of these questions will be discussed in the live revision show provided by James Simms (Wednesday, 3rd of January 2024, 17:15-18:15 on [youtube.com/TheEverLearner](https://www.youtube.com/TheEverLearner)).

All questions/mark schemes are available on ExamSimulator. Please note, there are hundreds of additional questions and mark schemes on ExamSimulator covering the Cambridge National in Sport Science R180 topics and skills. Within the platform, the teacher is assisted with the marking and full diagnostic feedback is also provided. ExamSimulator is a premium resource available via [TheEverLearner.com](https://www.TheEverLearner.com).

I hope this helps both students and teachers in their exam preparations.

*James Simms*





<b>Subject</b>	<b>Physical Education</b>
<b>Course</b>	CNAT Sport Science 2022: R180 Reducing the risk of sports injuries and dealing with common medical conditions
<b>Time allowed</b>	1 hour 15 minutes

<b>Title</b>	CNAT Sports Science R180 Reducing the risk of sports injuries and dealing with common medical conditions: National Mock Exam January 2024
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<b>Guidance</b>	<p>This is a full National Mock Exam designed to help support students taking the R180 exam in January 2024. The paper has been modelled on the 2022 SAMS. All questions and mark schemes are written with a thorough attention to detail by experienced exam writers. Instructions:</p> <ul style="list-style-type: none"><li>• Answer all questions.</li><li>• The final question of the paper is a synoptic assessment.</li><li>• Good luck!</li></ul>
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<b>Total marks</b>	70
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1. A cool-down prevents blood pooling and reduces the risk of DOMS.  
State **two** other physiological benefits of a cool-down.
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Marking points (maximum 2)

- (1) [AO 1] Gradually lowers heart rate/Heart rate is lowered gradually/Gradual decrease in heart rate
- (2) [AO 1] Gradually lowers temperature/Temperature is lowered gradually/Gradual decrease in temperature
- (3) [AO 1] Circulates blood and oxygen/Blood and oxygen circulated/Circulates blood
- (4) [AO 1] Gradually lowers breathing rate/Breathing rate is reduced gradually/Gradual decrease in breathing rate
- (5) [AO 1] Removes waste products such as lactic acid/Removal of waste products/Lactic acid is removed

2. Identify **four** reasons for aggression.
- 

Marking points (maximum 4)

- (1) [AO 1] Level of performance/Performance level/Representaton level
- (2) [AO 1] Pressure to win/Pressure from within/Pressure from the coach
- (3) [AO 1] Decision of officials/Referee decision/Umpire decisions
- (4) [AO 1] Performance-enhancing drugs/PEDS
- (5) [AO 1] Retaliation
- (6) [AO 1] Influence of the crowd/Influence of the spectators/Influence of the media

3. X-rays are used to detect injury.  
State two injuries which are detected by a X-ray.
- 

Marking guidance

Accept any suitable named injury detected by a X-ray.

Marking points (maximum 2)

- (1) [AO 1] Soft tissue injuries/Soft tissue
- (2) [AO 1] Ligament strain/Ligament strain/Ligament damage
- (3) [AO 1] Fractures/Bone damage/Broken bones
- (4) [AO 1] Dislocations/Joint damage

4. Headache is a symptom of heat exhaustion.  
Identify **four** other symptoms of heat exhaustion.
- 

#### Marking guidance

Accept any other suitable symptom of heat exhaustion.

#### Marking points (maximum 4)

- (1) [AO 1] Excessive sweating/Sweating
- (2) [AO 1] Dizziness/Feeling dizzy/Dizzy
- (3) [AO 1] Being very thirsty/Extreme thirst
- (4) [AO 1] Feeling sick/Being sick/Nausea
- (5) [AO 1] Rapid pulse/High pulse rate/Pulse racing
- (6) [AO 1] Rapid breathing/High breathing rate/Excessive breathing
- (7) [AO 1] Pale and clammy skin/Pale skin/Clammy
- (8) [AO 1] Muscle cramps/Leg cramps/Arm cramps

5. Look closely at the table.  
Identify an extrinsic factor to replace each letter.
- 

#### Marking guidance

Letters and factors must be correctly matched as per the marking points.

#### Marking points (maximum 6)

- (1) [AO 1] A is environment/A environment
- (2) [AO 1] B is equipment/B equipment
- (3) [AO 1] C is coaching/C coaching/C is instructing
- (4) [AO 1] D is type of activity/ D is activity type/D activity type
- (5) [AO 1] E is equipment/E equipment
- (6) [AO 1] F is environment/F environment

6. SALTAPS is an on-field injury assessment routine. Identify the **L** and **P** of SALTAPS.
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Marking points (maximum 2)

- (1) [AO 1] L is Look/L Look
- (2) [AO 1] P is Passive/P Passive

7. Increased thirst is a common symptom of type 1 and type 2 diabetes. Identify **four** other symptoms.
- 

Marking points (maximum 4)

- (1) [AO 1] Urinating more often/Increased urination/Loss of bladder control
- (2) [AO 1] Extreme tiredness/Extreme fatigue/Lethargy
- (3) [AO 1] Weight loss/Loss of weight/Losing weight
- (4) [AO 1] Cuts take a long time to heal/Longer healing/Cuts do not heal
- (5) [AO 1] Dehydration/Loss of hydration

8. Which of the following is a treatment for sudden cardiac arrest (SCA)?
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Marking points (maximum 1)

- (1) [AO 1] B Defibrillator/B/Defibrillator

9. Benjamin is a skier and uses a cool-down after every training session. Identify the **three** missing components of a cool-down from the image **and** describe all three.
- 

Marking points (maximum 6)

- (1) [AO 1] Pulse lowering/Gradually reduce heart rate
- (2) [AO 1] Gentle jog/Walking/Use of rollers
- (3) [AO 1] Static stretches/Static
- (4) [AO 1] Holding a stretch for 10-30 seconds to increase RoM
- (5) [AO 1] PNF stretching/Proprioceptive neuromuscular facilitation/PNF
- (6) [AO 1] Passive stretches followed by isometric contractions to increase RoM

10. A pulse raiser and a skill rehearsal are two components of a warm-up. Name two other components of a warm-up for a skier.
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Marking points (maximum 2)

- (1) [AO 1] Mobility exercises/Mobility
- (2) [AO 1] Dynamic stretching

11. Explain why a warm-up is of psychological benefit to a skier.
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Marking points (maximum 4)

- (1) [AO 1] Heightens arousal/Controls arousal/Lowers arousal
- (2) [AO 1] Improves concentration/Improves focus/Selective attention
- (3) [AO 1] Increases motivation/Increases drive/Increases commitment
- (4) [AO 1] Causes mental rehearsal/Mental preparation/Mental rehearsal
- (5) [AO 1] Increases confidence/Increases self-esteem
- (6) [AO 1] Faster reaction times/Faster responses/Quicker processing speed

12. One type of acute injury is damage to the skin. Identify **two** forms of skin damage that can occur to a hockey player's hands.
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Marking points (maximum 2)

- (1) [AO 1] Blisters
- (2) [AO 1] Abrasions/Cuts/Grazes
- (3) [AO 1] Contusions/Bruising/Bruises

13. Gender and age are two intrinsic factors that can influence injuries. Identify **four** other intrinsic factors.
- 

Marking points (maximum 4)

- (1) [AO 1] Size of the group/Number of participants
- (2) [AO 1] Fitness levels of the participants/Fitness levels
- (3) [AO 1] Amount of experience of the activity/Previous experience
- (4) [AO 1] Medical conditions/Previous injuries
- (5) [AO 1] Amount of sleep/Fatigue/Tiredness
- (6) [AO 1] Technique of the participants
- (7) [AO 1] Levels of hydration/Levels of energy/Nutrition

14. Explain how a rugby coach might plan a session differently depending on the age **and** the gender of the participants.
- 

Marking points (maximum 2)

- (1) [AO 1] For gender, ensure there is no contact between males and females/Gender-specific sessions
- (2) [AO 1] For age, ensure the activity is appropriate for the age group/No play between children and adults/Age categories

15. Identify two symptoms of asthma **and** explain how the symptoms can be treated.
- 

Marking points (maximum 4)

- (1) [AO 1] Coughing fit/Coughing
- (2) [AO 1] Shortness of breath/Wheezing/Whistling chest
- (3) [AO 1] Tightness in the chest
- (4) [AO 1] Insufficient intake of air
- (5) [AO 1] Reduced rate of diffusion between the lung and the blood/Reduced gaseous exchange
- (6) [AO 1] Reduced saturation of oxygen in the blood/Less HbO<sub>2</sub>/Less oxyhaemoglobin
- (7) [AO 1] Treat with reassurance/Calm the person down/Reassurance
- (8) [AO 1] Treat with inhalers/Reliever inhaler/Inhaler
- (9) [AO 1] Treat with nebulisers/Nebulisers



16. If a person has tennis elbow, state where they experience pain.

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Marking points (maximum 1)

(1) [AO 1] Option A Pain on the outside of the elbow/Pain on the outside of the elbow/Option A

17. Identify **one** likely cause of tennis elbow.

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Marking points (maximum 1)

(1) [AO 1] Overuse/Repetitive strain

(2) [AO 1] Poor technique

18. Other than tennis elbow, identify **one** chronic injury that a tennis player might be likely to experience.

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Marking guidance

Accept other reasonable chronic injuries that could occur to a tennis player.

Marking points (maximum 1)

(1) [AO 1] Stress fracture

(2) [AO 1] Shin splints

(3) [AO 1] Achilles tendonitis

(4) [AO 1] Epicondylitis/Golfer's elbow

(5) [AO 1] ITBS/Iliotibial band syndrome

19. Look closely at this image. Identify the **two** terms that are most likely to feature on an emergency action plan.

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Marking points (maximum 2)

(1) [AO 1] First aider

(2) [AO 1] Defibrillator

20. As part of an emergency action plan (EAP), a tennis coach keeps a laminated card with emergency contact numbers on it in the first-aid kit.  
Which element of the EAP have they planned for?
- 

Marking points (maximum 1)

(1) [AO 1] Option B Emergency communication/Emergency communication/Option B

21. As part of an emergency action plan (EAP), a tennis coach completes a first-aid course.  
Which element of the EAP have they planned for?
- 

Marking points (maximum 1)

(1) [AO 1] Option A Emergency personnel/Emergency personnel/Option A

22. Nilam sprained her ankle ligament when playing netball and PRICE therapy was the treatment used.  
Explain how the **I** and **E** of PRICE is used when dealing with a sprained ankle ligament.
- 

Marking guidance

The learner needs to state the meaning of the letter with the correct explanation of the treatment for a sprained ankle ligament. The meaning of the letter in its own in **not**

Marking points (maximum 2)

(1) [AO 2] Apply ice to reduce swelling/Apply ice in the first 15 to 20 mins to reduce swelling/Ice reduces swelling

(2) [AO 2] Elevate about the height of the heart to reduce blood flow to the sprain/Elevate to reduce blood flow

23. Kate is using before climbing the wall to reduce the risk of injury.  
State **two** other mental strategies she could use.
- 

Marking points (maximum 2)

(1) [AO 1] Imagery

(2) [AO 1] Selective attention/Selectively attending

24. Kate is using before climbing the indoor wall.  
Describe how mental rehearsal will reduce the risk of injury.
- 

### Marking guidance

One mark for a description of mental rehearsal and a further mark on how this will reduce the risk of injury **in** indoor rock climbing.

### Marking points (maximum 2)

- (1) [AO 1] Mental rehearsal is seeing themselves being successful/Watching themselves prior to a performance/Going through the movements in their mind
- (2) [AO 2] Leads to a successful climb and not falling/Grips to wall will be accurate/Kate will not fall

25. Analyse the intrinsic factors that can lead to chronic injuries when participating in sporting activities.  
Within your answer, use sporting examples of different chronic injuries.
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### Marking guidance

#### 8-mark level descriptors

#### Marking points (maximum 8)

- (1) [AO 1] Gender is an intrinsic factor/Gender
- (2) [AO 1] Males playing against females/Gender categories
- (3) [AO 1] Age is an intrinsic factor/Age
- (4) [AO 1] Age categories/Junior sections/No adults vs children
- (5) [AO 1] Level of experience is an intrinsic factor/Level of experience
- (6) [AO 1] Inexperienced performers are more likely to use poor technique
- (7) [AO 1] Body weight is an intrinsic factor/Body weight
- (8) [AO 1] Obesity can lead to damage to weight-bearing joints
- (9) [AO 1] Fitness levels is an intrinsic factor/Level of fitness
- (10) [AO 1] Low levels of flexibility can lead to injury
- (11) [AO 1] Technique is an intrinsic factor/Technique/Sporting ability
- (12) [AO 1] Using the wrong technique over time can lead to injury
- (13) [AO 1] Previous injury is an intrinsic factor/Previous injury
- (14) [AO 1] Performer with a history of stress fracture is more likely to experience it again
- (15) [AO 1] Achilles tendonitis
- (16) [AO 2] Repetitive take-off and landing during triple jump causes inflammation of the achilles
- (17) [AO 1] Rotator cuff tendonitis
- (18) [AO 2] Repeatedly swinging a golf club at the driving range can cause inflammation of the ankles
- (19) [AO 1] Patellar tendonitis
- (20) [AO 2] Running long distances when marathon training causes inflammation of the patella tendon
- (21) [AO 1] Lateral epicondylitis/Tennis elbow
- (22) [AO 2] Repeatedly striking a tennis ball with poor technique causes pain on the outside of the elbow
- (23) [AO 1] Medial epicondylitis/Golfer's elbow

(24) [AO 2] Repeatedly striking a golf ball without performing a warm-up causes pain on the inside of the elbow

(25) [AO 1] Shin splints

(26) [AO 2] Hurdler repeatedly landing from jumps damages the soft tissue on the front of the shin

(27) [AO 1] Stress fracture

(28) [AO 2] Gymnast repetitively practising vaults causes cracks to develop in their shin bones