



## **Cambridge National**

### **Sport Science**

Unit **R041**: Reducing the risk of sports injuries

Level 1/Level 2

### **Mark Scheme for June 2016**

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.










All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

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1. These are the annotations, (including abbreviations), which must be used when marking

Annotation	Meaning of annotation
	Blank Page – this annotation <b>must</b> be used on all <b>blank</b> pages within an answer booklet (structured or unstructured) and on each page of an additional object where there is no candidate response.
	Tick – correct answer
	Cross – incorrect answer
DEV	Development of point (for use with levels question)
	Level 1 (for use with levels question)
	Level 2 (for use with levels question)
	Level 3 (for use with levels question)
	Benefit of doubt - but still tick
K	Knowledge mark (for use with levels question)
VG	Too vague
	Repeat
	Noted but no credit given / zero mark response
EG	A practical example given that is worth credit
S	Sub max reached

Question	Answer/Indicative content	Mark	Guidance
1	(b) Prevents lactic acid build-up	1	
2	<p><b>Three marks for three from:</b></p> <ol style="list-style-type: none"> <li>1. (Mobility) arm swings / hip circles/lunges/leg kicks/shoulder rotations/heel flicks/high knees/open and close gate</li> <li>2. (Dynamic movements) change of speed and direction drills or fast movements side to side e.g. shuttle runs, running in and out of cones</li> <li>3. (Skill rehearsal) dribbling drills for football; passing drills for netball</li> </ol>	3	<p>Accept other relevant practical examples</p> <p>Do not accept:</p> <ul style="list-style-type: none"> <li>• Point 3 practical example as a skill without a sport e.g. passing = vg passing in football = 1 mark</li> <li>• Point 2 – sprints = vg</li> <li>• Point 2 – side steps = vg</li> </ul>
3	<p><b>Two marks for two from:</b></p> <p>Examples include:</p> <ol style="list-style-type: none"> <li>1. I/D = Hamstring (stretch) Description = stretch one leg out straight then, bending at the hip, try to touch the toes</li> <li>2. I/D = Quadriceps (stretch ) Description = balancing on one leg, pull the other leg up behind you so that the foot is touching the buttocks, keep knees together</li> </ol>	2	<p>One mark for identifying a stretch (maximum of 2)</p> <ul style="list-style-type: none"> <li>• Must be name of the stretch (e.g. dynamic stretch/open and close the gate/ lunges/butterfly stretch)</li> <li>• Or Name of muscle / joint associated with the stretch e.g. calf stretch</li> <li>• Do not accept 'touch your toes' (must be named stretch)</li> <li>• Do not accept a repeat stretch even if description is different (open gate and closed gate mark as the same stretch)</li> <li>• Accept 'twist neck to left and right'</li> </ul> <p>Do not accept:</p> <ul style="list-style-type: none"> <li>• Leg stretch / arm stretch / star jumps / heel flicks / high knees etc.</li> <li>• Circle the ankle</li> </ul> <p>One mark for an adequate description of each stretch (maximum 2)</p> <ul style="list-style-type: none"> <li>• If description is appropriate to a stretch then award the description mark even if no stretch is named.</li> <li>•</li> </ul>

Question			Answer/Indicative content	Mark	Guidance
4		a	<b>Kyphosis</b>	1	
		b	<b>Lordosis</b>	1	
		c	<b>Scoliosis</b>	1	
5			<p><b>Six marks for six from:</b></p> <ol style="list-style-type: none"> <li>(Factor) <u>Poor</u> stance/gait/walk/run</li> <li>(Expl) (e.g. bending your knees or hunching your shoulders when stood up or slumping)</li> <li>Sitting or sleeping <u>positions</u> or slouching or sitting without support</li> <li>(e.g. slumping/slouching on the sofa rather than sitting upright)</li> <li>Physical/genetic defects or obesity/overweight/pregnancy</li> <li>(e.g. muscles weaken around an injured area)</li> <li>Lack of exercise</li> <li>(e.g. lack of core muscle strength means less support; being overweight puts strain on posture)</li> <li>Fatigue or lack of sleep</li> <li>(e.g. tired muscles will be unable to support the skeleton properly) or you slept awkwardly</li> <li>Emotional factors or low self esteem or lack of confidence</li> <li>(e.g. can cause slouching/curved back/ head down that can influence posture)</li> </ol>	6	<p>Accept other relevant examples            One mark for factor (odd numbers)            One mark for explanation/example (even numbers)</p> <ul style="list-style-type: none"> <li>If factor is incorrect, <b>do not accept explanation</b> i.e. valid factor must be identified for explanation to get marks.</li> <li>If factor does not match MS then vg</li> <li>Do not accept sports/carrying injuries - repeats question</li> <li>'Sitting' = vg (pt3)(must be 'sitting position' / 'sitting awkwardly' etc)</li> <li>'If you don't sit straight you will damage your back' = vg (pt 4)</li> <li>Accept scoliosis/lordosis/kyphosis (pt 5)</li> <li>Accept 'Will cause a curved spine' (pt 4)</li> <li>Accept (for pregnancy) 'puts a stain on your back' (pt6)</li> <li>Do not accept 'humped back' for (pt5)</li> </ul>

Question			Answer/Indicative content	Mark	Guidance
			13. Clothing/footwear 14. (e.g. wearing high heels can affect posture)		
6		a	<b>Two marks for:</b> Baseball/softball/cricket/skiing/cycling/American football/BMX/Motor-cross/GP/Motor racing/ice hockey/hockey/caving/climbing/canoeing/ Kayaking/snowboarding / horse riding	2	Accept other relevant sports in which a helmet is worn <ul style="list-style-type: none"> <li>• Accept: 'riding a bike' (BOD)</li> <li>• Do not accept rugby / football/martial arts/boxing /fencing - Look for (hard) helmet rather than a (soft) head guard</li> </ul>
		b	<b>One mark for:</b> Football / hockey / ice hockey / lacrosse / kickboxing / rugby / mountain biking / BMX / skiing	1	Accept other relevant sports in which shin pads are worn  Do not accept cricket
7			<b>Three marks for three from:</b> 1. Check weather conditions (are suitable for outdoor play) 2. (Playing) surface / floor / environment or performance area or surrounding area (check for any objects in the way, uneven or slippery surface) 3. Check the (performance) equipment (ensure it is not broken/check posts are stable) 4. Protective equipment 5. Suitable clothing or footwear worn 6. Jewellery removed or protected 7. Hair tied back or finger nail length	3	<ul style="list-style-type: none"> <li>• <b>Safety checks must be relevant to <u>coaching netball</u></b></li> <li>• Do not accept health checks or checks for injury or group size or size of area</li> <li>• Check for hazards = vg</li> </ul>



Question	Answer/Indicative content	Mark	Guidance
11	<p><b>Four marks for four from:</b></p> <p><b>One mark sub max for:</b></p> <ol style="list-style-type: none"> <li><b>Sever's (disease)</b> <b>One mark sub max for:</b></li> <li>Affects / pain in <u>heel/s</u> (when walking)</li> <li>During a 'growth spurt' or bones growing quicker/different rates than muscles</li> <li>The (Achilles) tendon at the back of the heel pulls at the heel bone</li> </ol> <p><b>One mark sub max for:</b></p> <ol style="list-style-type: none"> <li><b>Osgood Schlatter's (disease)</b></li> </ol> <p><b>One mark sub max for:</b></p> <ol style="list-style-type: none"> <li>Affects / pain / swelling in upper part of the shin / knee</li> <li>Most commonly occurs in teenagers (who play sport) or during a 'growth spurt' or bones growing quicker/different rates than muscles</li> </ol>	4	<p><b>Accept:</b> 'phonetic' spelling attempts if recognisable Do not accept: Osgood disease or Schlatter's disease</p> <p><b>Accept:</b> description without the name of the disease <b>sub max</b> one mark for each</p> <ul style="list-style-type: none"> <li>'foot' = vg (pt2)</li> </ul>
12	<p><b>Two marks for two from:</b> (Massage)</p> <ol style="list-style-type: none"> <li>Encourages/increases/stimulates the flow of blood (into the affected body part)</li> <li>Increases flexibility (in the affected body part) or help to relax / loosen muscles or relieves tension/tightness</li> <li>Can help manage/relieve pain or soothes or manage DOMS / muscle soreness</li> <li>To break down scar tissue</li> </ol>	2	<ul style="list-style-type: none"> <li>Look for <u>responses</u> to massage not description of it</li> <li>Releases trapped nerve = vg</li> <li>'Makes them feel better' = vg</li> <li>'Push away scar tissue' = vg</li> </ul>
	<p><b>Two marks for:</b> (Taping)</p> <ol style="list-style-type: none"> <li>Provides support or keeps muscles / joints in place / reduces mobility / prevents movement</li> <li>Reduces pain</li> </ol>	2	<ul style="list-style-type: none"> <li>'Keeps it straight' = vg</li> <li>'Keeps it in place' = BOD (pt 1)</li> <li>Accept 'Keeps bones/joints straight' = pt 1</li> </ul>





Question	Answer/Indicative content	Mark	Guidance
14	<p><b>One mark for:</b>  <b>(Oliver's asthma symptom)</b></p> <ul style="list-style-type: none"> <li>-wheezing</li> <li>-coughing</li> <li>-shortness of breath</li> <li>-breathlessness or run out of breath</li> <li>-difficulty breathing or heavy breathing</li> <li>-difficulty speaking</li> <li>-tightness in the chest</li> <li>-pale skin</li> <li>-clammy skin</li> <li>-grey/blue lips (if attack severe)</li> </ul>	1	<p>Accept any other relevant symptoms or appropriate treatments.  <b><u>Mark first attempt only</u></b></p>
	<p><b>One mark for:</b>  <b>(Oliver's asthma treatment)</b></p> <ul style="list-style-type: none"> <li>-keep/stay calm or reassure or make light conversation</li> <li>-sit them down or upright</li> <li>-encourage them to take slow and steady breaths</li> <li>-use of inhaler / pump</li> <li>-contact emergency services (if needed)</li> </ul>	1	<p><b><u>Mark first attempt only</u></b></p> <p>'Give medication' = vg</p>
	<p><b>One mark for:</b>  <b>(Jasminder's epilepsy symptom)</b></p> <ul style="list-style-type: none"> <li>-fits or seizures or twitching or rubbing hands together</li> <li>-foaming at the mouth or smacking of lips</li> <li>-rigidity / muscle stiffness</li> <li>-loss of consciousness or dizziness or collapse</li> <li>-blank stare</li> <li>-confusion</li> <li>-loss of bladder/bowel control</li> <li>-sense of 'déjà vu'</li> <li>-difficulty speaking</li> <li>- tingling (sensation)</li> </ul>	1	<p><b><u>Mark first attempt only</u></b></p>

Question	Answer/Indicative content	Mark	Guidance
	<p><b>One mark for:</b> <b>(Jasminder's epilepsy treatment)</b></p> <ul style="list-style-type: none"><li>-move objects out of the way</li><li>-keep (head) safe/put cushioning under head</li><li>-reassure them or calm them down</li><li>-allow them to fit</li><li>-<u>after the fit is over</u> Put them in the recovery position</li><li>-seek medical advice/999</li></ul>	1	<p><b><u>Mark first attempt only</u></b></p> <p>Do not accept 'emergency action plan '</p>

Question	Answer/Indicative content	Mark	Guidance
15	<p><b>Levels of response:</b></p> <p>0 = nil response or response not worthy of credit</p> <p><b>MB1 (1 – 3 marks)</b> The response shows a limited understanding of the psychological benefits of a warm-up. Candidates provide simple bullet points and limited descriptions of a few points from the indicative content. No attempt is made at evaluation and there may be some irrelevant material in the answer. There is little or no use of technical vocabulary and sentences have limited coherence and structure. Errors in grammar, punctuation and spelling may be noticeable and intrusive.</p> <p><b>MB2 (4 – 6 marks)</b> The response shows an understanding of the psychological benefits of a warm-up, which may include the use of one or more of the developed points. There is some use of technical vocabulary and sentences for the most part are relevant and are coherent. There are occasional errors in grammar, punctuation and spelling.</p> <p><b>MB3 (7 - 8 marks)</b> The response shows a detailed understanding with detailed discussion. Candidates make many points from the indicative content, several of which may be developed, leading to an evaluation being clearly made. The answer is well structured and uses appropriate terminology and technical vocabulary. There are few if any errors in grammar, punctuation and spelling.</p>	8	<p><b>In differentiating between levels look for:</b></p> <p>MB1: - Simple description rather than explanation - Some limited benefits of a warm-up, but no examples - Little or no links with reducing injury</p> <p>MB2: - May be one or more developed points - Some explanation - with some links with reducing injury - Includes general practical examples</p> <p>MB3: - Points are developed / expanded in more than one area of the answer - Clear explanations - linked to reducing injury - Very few QWC errors - Practical examples are clearly linked to a specific warm up benefit</p> <p><b>Indicate the level at the end of the response</b></p>

Question	Answer/Indicative content	Mark	Guidance
	<p><b>Indicative Content</b>  <b>(Psychological benefits of a warm-up)</b></p> <ol style="list-style-type: none"> <li>1. heightens or controls arousal levels or control aggression</li> <li>2. 'get in the zone' or settle nerves</li> <li>3. improves concentration/focus</li> <li>4. increases motivation</li> <li>5. allows mental rehearsal to take place</li> <li>6. increases self-awareness</li> <li>7. allows effective / clear / safe decision making</li> <li>8. reviewing skills and strategies.</li> <li>9. positive imagery can also relax/ build concentration.</li> <li>10. <b>prepare the body for the effort to come.</b></li> <li>11. <b>increase confidence</b></li> </ol> <p><b>(Examples of how these benefits might reduce injury)</b></p> <ol style="list-style-type: none"> <li>11. A gymnast might use imagery to stop you being distracted or to be more focussed to avoid injury</li> <li>12. A rugby player might use mental rehearsal to cut down on reaction time and avoid injury</li> <li>13. A netball player might control her anxiety and therefore less likely to perform any dangerous moves</li> </ol>		<p>Look for an explanation of benefits.</p> <p>Look for relevant and appropriate practical examples of how the mental benefits of a <u>warm up</u> might reduce the risk of injury.</p>

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