



Cambridge National

Sport Science

Level 1/Level 2

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

Mark Scheme for June 2013

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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.

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1. Annotations

1		281	?	Unclear
2		31	BOD	Benefit of doubt
3		21	Cross	Cross
4		741	DEV	Development
5		661	EG	Example/Reference
6		611	K	Knowledge
7		311	L1	Level 1
8		321	L2	Level 2
9		331	L3	Level 3
10		271	REP	Repeat
11		361	S	S (to be used to indicate 'sub max reached' in these units)
12		811	SEEN	Noted but no credit given
13		11	Tick	Tick
14		731	VG	Vague

2. Subject-specific Marking Instructions

Question		Answer	Marks	Guidance
1	(a)	<p>(Psychological benefits of a warm up) Two marks from:</p> <ol style="list-style-type: none"> 1. Heightens/control arousal levels/'get in the zone'/settle nerves or gets you in the right frame of mind/mentally prepares/increase aggression/calming down 2. Improve concentration/focus /selective attention 3. Increase motivation/drive 4. Mental rehearsal 5. Increase confidence/reduce worry 6. Reduce reaction time 	2	<p>Two marks max for psychological benefits</p> <p>Do not accept physical benefits Do not accept prepare for the game</p>
	(b)	<p>One mark from:</p> <ol style="list-style-type: none"> 1. Optimum arousal/drive ensures performer is fully focused or makes no rash decisions or uses correct technique or under arousal may cause injury due to missing vital cues or over arousal cause injury as too 'wound-up' 2. Concentration/on task/more aware/more alert allows correct decisions to be made 3. Response time/reaction time improved / reaction to decisions quicker / beating an opponent to the ball / avoiding the tackle (or example)/being more alert 	1	<p>Must be relevant to reducing injury</p>
2		<p>(R.I.C.E.) One correct answer only:</p> <p>B Rest, Ice, Compress, Elevate</p>	1	

Question	Answer	Marks	Guidance
3	<p>(Environmental factors) Two marks from:</p> <ol style="list-style-type: none"> 1. Weather/climate/sun/rain/snow/ice – e.g. wet football pitch causing players (to slip/fall) 2. Playing surface/potholes/performance/surrounding area – e.g. Falling on astroturf/colliding into advertising boards 3. Litter/(sharp) objects/glass/stones/wet leaves 4. Other participants – e.g. being tackled in hockey) 5. Equipment in the environment e.g. goal posts/hit in face by the ball 	2	<p>Any two answers listed acceptable for two marks max</p> <p>Answer must contain different examples of environmental factors or activity examples (no requirement for an activity example in the question) but BOD examples as equivalents e.g. hard football pitch (pt 2), slippery football pitch due to rain (pt 1)</p> <p>Do not accept environment as an answer on its own. Do not accept single word answers</p>
4	<p>(Specific characteristics for planning a warm up/cool down) Three marks from:</p> <ol style="list-style-type: none"> 1. Size of group/large group /small group 2. Age of participants/young participants/old participants 3. Sex of participants/gender/whether group is mixed sex 4. Experience of participants or novice or expert or skill level of participants 5. Individual fitness levels/trained participants /unfit participants/previous injury/flexibility/size/weight of participants 6. Medical conditions participants may have/ asthma/diabetes or other named conditions. 7. Disability 	3	<p>Any three answers listed acceptable for three marks max</p> <p>Answer must be related to characteristics of the individual/group and not to environmental/type of activity</p>

Question	Answer	Marks	Guidance
5	<p>(Physical benefits of a cool down) Four marks from:</p> <ol style="list-style-type: none"> 1. Gradually lowers/slows heart rate/blood pressure 2. Gradually lower (body) temperature 3. Maintain circulate blood/oxygen supply 4. Gradually decrease breathing rate/ stop feeling dizzy/faint/nausea/sick 5. Remove/gets rid of waste products / lactic acid or repays oxygen debt 6. Reduce risk of (muscle) soreness or stiffness/cramp/DOMS/muscle tension/seizing up or helps to relax/loosen up body/muscles 7. Decreases risk of injury/pulling a muscle 8. Aid recovery (by stretching muscles)/facilitates participation following day or prevents feeling tired/fatigued 9. Prevents blood pooling 	4	<p>One mark for each relevant point</p> <p>Key word Gradually/slowly (Pt 1,2, 4)</p> <p>Do not accept prevents lactic acid build up – must be reference to reduce/lower (pt 5)</p> <p>Do not accept psychological benefits</p>
6	<p>(a)</p> <p>(Asthma) Three marks max from: (Symptoms):</p> <ol style="list-style-type: none"> 1. Coughing 2. Wheezing 3. Shortness of breath/ breathlessness/ difficulty breathing/ heavy breathing/ panting/ difficulty speaking 4. Tightness in the chest 5. Pale/ clammy skin 6. Grey/ blue lips (if attack severe). 	3	<p>Three marks max for identifying symptoms of asthma</p>

Question		Answer	Marks	Guidance
	(b)	<p>Two marks max from: (How to respond):</p> <ol style="list-style-type: none"> 1. Reassurance/stay calm/keep them relaxed/make light conversation 2. Sit them down or upright 3. Encourage to take slow/steady breaths 4. Use an inhaler / pump 5. Contact emergency services (if needed) or contact parents/carers 6. Use of steroid (tablets - if prescribed). 	2	Two marks max for stating appropriate ways to deal with asthma attacks.
7	(a)	<p>(Causes of poor posture) Four marks from:</p> <ol style="list-style-type: none"> 1. Poor stance/gait/slouching or example of actions which may cause poor posture e.g. bending your knees when walking or hunching your shoulders when standing up/poor technique/poor coaching 2. Poor sitting or sleeping positions or example such as slumping/slouching on the sofa rather than sitting upright or poorly designed/uncomfortable seats/chairs 3. Physical defects such as muscles weakened around an injured area/muscular imbalance/injury/back problems 4. Fatigue such as tired muscles (will be unable to support the skeleton properly) 5. Emotional/psychological/mental factors such as having low self-esteem or lack of confidence can influence 6. Footwear or example such as wearing shoes with high heels 7. Poor carrying technique/heavy bags/poorly fitting rucksack 8. Genetic predisposition 	4	<p>Any four answers acceptable for four marks max</p> <p>Do not accept lack of exercise as an answer. Do not accept single word answers (must describe)</p>

Question	Answer	Marks	Guidance
(b)	(Injuries related to poor posture) Two marks from: 1. Pelvic tilt 2. Lordosis 3. Kyphosis/hunched back 4. Round shoulders 5. Scoliosis. 6. Prolapsed/slipped disc	2	Any two answers listed acceptable for two marks max

Question	Answer	Marks	Guidance
8	<p>(Overuse injuries) Two marks from:</p> <ol style="list-style-type: none"> 1. Tendonitis 2. Tennis elbow 3. Golfer's elbow 4. Shin splints. 5. Repetitive strain injury (RSI) 6. Osgood-Schlatter (Disease) 7. Runner's Knee 8. Dancer's Hip 9. Example of (chronic) shoulder injury/bowler's shoulder 	2	Any two answers listed acceptable for two marks max
9	<p>(SALTAPS) Seven marks from:</p> <ol style="list-style-type: none"> 1. On-field assessment routine/evaluate/assessment of whether a performer should continue to play/train 2. See – What happened/ask someone/stop play following injury/check facial expressions/posture 3. Ask – the player what happened/how they feel/where it hurts/questions player about the injury 4. Look – at what is injured/ for signs of injury (bleeding, bruising, swelling, deformity)/compare to other limbs 5. Touch – the injured site for pain/tenderness/abnormalities 6. Active – Can the player move the limb themselves (with or without pain)/non weight bearing movement 7. Passive – You move the limb/joint to full extent (note reaction)/taking movement further than active movement 8. Strength – Can they hold/apply own weight/Is the player able to get up?/provide resistance against injured part/ can they stand-up following injury. 	7	<p>Any seven answers acceptable for seven marks max</p> <p>Description needed to gain allocated mark</p> <p>Examples may be given as descriptions</p> <p>One mark max if no description/example and SALTAPS correctly listed</p>

Question		Answer	Marks	Guidance
10	(a)	<p>(Diabetes)</p> <p>Two marks max for medical condition:</p> <ol style="list-style-type: none"> 1. It is a chronic condition 2. Body unable to use glucose properly or to control blood sugar levels/glucose/sugar may be found in blood / urine or body has high sugar level 3. Body not producing any/enough insulin 4. Body is insulin resistant (type 2) 5. Might make you insulin dependent (type 1) 6. Could create coma condition if not treated 	2	<p>Two marks max for description of medical condition of diabetes</p> <p>Do not credit other symptoms</p>
	(b)	<p>Two marks max for symptoms:</p> <ol style="list-style-type: none"> 1. High or low sugar levels 2. Increased thirst 3. Going to the toilet lots 4. (Extreme) tiredness /unconscious/coma-like state 5. Weight loss 6. Odd behaviour or could be mistaken for 'drunkenness' 7. Confusion or memory loss 8. Pale / cold/ sweaty skin 9. Nausea/vomiting 10. Blurred vision 11. Dry mouth 12. Slow healing cuts/sores 13. Irritating skin/tingling skin 14. Abdominal pain 15. Trembling/shaking 16. Red or swollen gums 	2	Two marks max for symptoms

Question	Answer	Marks	Guidance
11	<p>(Injuries) Three marks from:</p> <ol style="list-style-type: none"> 1. (Hard) tackle 2. Being hit by a ball 3. Overuse injuries (shin splints from long distance running)/too much training 4. (Sprains) from landing (awkwardly) 5. (Strain) due to overstretching 6. Falling or slipping over whilst performing 7. Colliding with other opponents/equipment e.g. goalposts 8. Being fouled (e.g. high tackle) 9. Injuring yourself fouling someone else or not playing by the rules or safe guidelines or behaving inappropriately/coaching inappropriate/dangerous techniques/strategies 10. Not warming-up/stretching/preparing properly 11. Incorrect/faulty equipment or lack of equipment e.g. shin pads 12. Objects/glass on surface 	3	<p>Answers must be different examples of how they might get injured which are relevant to the activity identified</p> <p>If no activity identified one mark max</p> <p>Accept suitable equivalents</p>
12	<p>(Emergency action plan) Three marks from:</p> <ol style="list-style-type: none"> 1. Emergency personnel/first responder/first aider/coach 2. Emergency communication/telephone/emergency contact numbers/emergency services/ambulance/999 3. Emergency equipment/first aid (kits)/evacuation chair 	3	<p>Any order of the plan is accepted</p>

Question	Answer	Marks	Guidance
14	<p>(Protective equipment) Three marks from:</p> <ol style="list-style-type: none"> 1. Gum shield in boxing/hockey/rugby 2. Helmets in cycling/hockey/cricket 3. Scrum cap in rugby/water polo cap 4. Goggles in skiing 5. Leg guards/pads in cricket 6. Elbow/knee pads in mountain biking 7. Shoulder pads in American Football 8. Chest protector hockey/ice hockey 9. Gloves for football goalkeeper 10. Equipment that has protective coverings e.g. post pads 	3	<p>Any three answers listed acceptable for three marks max but must be linked to a sport or activity. Accept: cycling helmet (because the activity is identified)</p> <p>Do not accept for two marks a repeat of the same type of equipment e.g. helmet in cycling and helmet in hockey (one mark only) Accept different protective equipment in the same sport e.g. gum shield in boxing and a helmet in boxing (2 marks)</p> <p>Do not accept shin pads (in the question)</p> <p>Do not accept footwear</p> <p>Do not accept life-saving equipment e.g. life jacket</p> <p>Accept any other relevant example</p>

Question	Answer	Marks	Guidance
15	<p>(Types and treatment of acute sports injuries) 0 = nil response or response not worthy of credit</p> <p>MB1 (1–3 marks) The response shows a limited understanding of the types of common acute sporting injuries. Candidates provide simple descriptions of a few points from the indicative content. No attempt is made at explanation 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>MB2 (4–6 marks) The response shows an understanding of some of the types and treatment of common acute sports injuries. Candidates make some valid points from the indicative content with good knowledge and understanding. Some attempt at explanation is made. At this level candidates may address a number of injuries, and at the top of the level one or more of the developed points may be seen. 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>MB3 (7–8 marks) The response shows a detailed understanding of the types and treatment of common acute sports injuries. Candidates make many points from the indicative content, several of which may be developed. Explanation is clearly given. 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>Differentiating between levels look for:</p> <p>MB1 (1-3 marks):</p> <ul style="list-style-type: none"> • Where valid indicative points are made they may • mainly relate to types and/or causes of acute sports injuries • Simple description rather than explanation • Reference to medical conditions (irrelevant) • Some misunderstandings/inaccuracies <p>MB2 (4-6 marks):</p> <ul style="list-style-type: none"> • May be one or more mostly accurate developed points for both types and treatments • Some explanation • Show links between injury and relevant treatment <p>MB3 (7-8 marks) :</p> <ul style="list-style-type: none"> • Three or more accurate points are developed/expanded for both types and treatments • Clear explanations • Accurate and relevant links frequently shown between injury and treatment • Very few QWC errors <p>Always indicate the level at the end of the response Not using the developed points must not prohibit candidates from achieving the top band or full marks, but is a potential indicator of the level at which they are responding.</p> <p>Developed points will show:</p> <ul style="list-style-type: none"> • Type • Suitable Treatment. <p>It would be expected that where both of these are used in the response, it would be a MB2 or MB3 response in most cases.</p>

Question	Answer	Marks	Guidance
	<p>Indicative content: Types of Injuries:</p> <ol style="list-style-type: none"> 1. <i>General points that acute injuries are immediate and short-medium term/contrast this with chronic injuries as a development</i> 2. (Soft tissue injuries)/sprains 3. Ligament damage/weakens joint 4. (Soft tissue injuries)/sprains 5. Muscle damage/tearing of muscle 6. Fractures, i.e. open, closed/broken bones 7. Pain/lack of movement/ 8. Concussion 9. Headache/dizziness/nausea/loss of balance/memory loss 10. Abrasions, i.e. grazes and cuts 11. Bleeding 12. Contusions, i.e. bruises 13. Burst blood vessels/discoloration 14. Pain/lack of movement/swelling 15. Any other type of relevant sporting injury related to trauma. <p>Treatment of Injury:</p> <ol style="list-style-type: none"> 1. SALTAPS on-field assessment routine (See, Ask, Look, Touch, Active, Passive, Strength) 2. R.I.C.E. (Rest, Ice, Compress, Elevate) 3. Stretching and massage 4. Taping, bandaging, splints, slings 5. Hot and cold treatments (eg heat pack, freeze spray) 6. Action plan to respond to injuries and medical conditions in a sporting context, ie emergency procedures 7. Any other suitable treatment methods. 		<p>Refer to below NHS link for additional information regarding types/symptoms/causes/treatments http://www.nhs.uk/Pages/HomePage.aspx</p> <p>Accept examples as developments (use EG as an annotation)</p>

APPENDIX 1

Question No. (and part)	Learning Objectives (Defined below or on a separate tab)			
	eg LO1	LO2	LO3	LO4
Targets →				
1 (a)		2		
1 (b)		1		
2			1	
3	2			
4		3		
5		4		
6 (a)				3
6 (b)				2
7 (a)	4			
7 (b)	2			
8			2	
9			7	
10 (a)				2
10 (b)				2
11	3			
12			3	
13		6		
14	3			
15			8	
Auto totals	14	16	21	9
Targets →	12 to 18	15 to 21	15 to 21	6 to 12

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