

Cambridge National

Sport Science

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

Level 1/Level 2

Mark Scheme for January 2019

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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.

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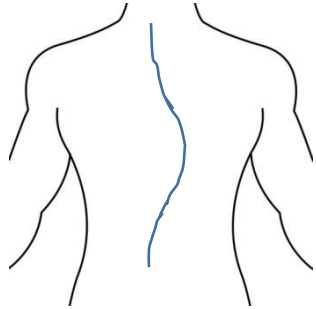
Annotations in RM Assessor

Annotation	Description	Annotation	Description
	Tick	KU	Knowledge and understanding
	Cross	EG	Example/Reference
BOD	Benefit of doubt	DEV	Development
TV	Too vague	L1	Level 1 response on extended response Q15 (*)
REP	Repeat	L2	Level 2 response on extended response Q15 (*)
IRRL	Significant amount of material which doesn't answer the question	L3	Level 3 response on extended response Q15 (*)
SEEN	Noted but no credit given / indicates sub-max reached where relevant	S	Sub-max reached

- **KU, EG** and **DEV** used instead of ticks on the extended response question to indicate where knowledge or development points from the indicative content have been made.
- On the extended response question 15 (*), one KU, EG or DEV does not necessarily equate to one mark being awarded; the marking is based on a levels of response mark scheme which awards a level and mark holistically based upon the quality of the response overall against the levels descriptors.

Please send a brief report on the performance of candidates to your Team Leader (Supervisor) by the end of the marking period. The Assistant Examiner's Report Form (AERF) can be found on the RM Cambridge Assessment Support Portal.

Your report should contain notes on particular strength displayed as well as common errors or weaknesses. Constructive criticism of the question paper/mark scheme is also appreciated.

Question	Answer	Marks	Guidance
1. (a)	<p>One mark for:</p> 	[1]	<p>Requires 'S' or 'C' shape drawing to be placed on to diagram</p> <p>Accept any equivalent sketch that curves to left/right followed by right/left for 'S' and a curve to one side for 'C' shape</p> <p>Do not accept a sketch that keeps curving to the left then right continuously = VG</p>
(b)	<p>Two marks for two from:</p> <p>1. Lordosis has a <u>forward (facing)/inner</u> or <u>abnormal/excessive</u> curvature of the <u>lower/bottom</u> of back/spine/lumbar or causes stomach to stick outwards/pushes buttocks out</p> <p>2. Kyphosis has an <u>backward (facing)/outward</u> or <u>abnormal/excessive</u> curvature of the <u>upper/top</u> of back/spine/thoracic or causes shoulder/top of back to appear hunched/rounded</p>	[2]	<p>Look for direction, location and curvature of spine or equivalent</p> <p>Lordosis = curvature of lower spine goes from a front to back direction = 1</p> <p>Kyphosis = curvature of upper spine goes from a back to front direction = 1</p> <p>Do not accept: Lordosis is a curve at the bottom of spine = VG (requires direction or severity of curve or causes stomach/buttocks to stick out)</p> <p>Do not accept: Kyphosis is a curve at the top of spine = VG (requires direction or severity of curve or causes shoulder/top of back to appear hunched/rounded)</p> <p>Hunchback for kyphosis = VG Hunched back for kyphosis = BOD Rounding of upper spine for kyphosis = BOD</p>

Question	Answer	Marks	Guidance
(c)	<p>Two marks for two from:</p> <p>1. Unbalanced/poor balance or one side of hip/pelvis higher than other or hips not level and more chance of falling/tripping over or knocking into someone</p> <p>2. Poor technique causing poor posture/back ache/pain</p> <p>3. Over compensating due to leaning causing strain</p> <p>4. Weaker bones and more prone to breaks/fractures (if contact made/fall over)</p> <p>5. (Muscles) can lose flexibility and more prone to strains/pulling a muscle</p>	[2]	<p>Do not accept: Descriptions of pelvic tilt on it's own</p> <p>Responses must link to increase risk of injury</p> <p>Do not accept: increase risk of injury on it's own (in question)</p> <p>Do not accept: Unbalanced = VG, increases pain = VG</p>
(d)	<p>One mark for:</p> <p>Round shoulder</p>	[1]	<p>Mark first response only</p> <p>Do not accept: Scoliosis, lordosis, kyphosis and pelvic tilt (In question)</p> <p>Rounded shoulder = BOD</p>
2. (a)	<p>One mark for:</p> <p><u>Open</u> or <u>compound</u> fracture</p>	[1]	<p>Mark first response only</p> <p>Do not accept: Fracture on it's own</p>
(b)	<p>One mark for:</p> <p>Blisters</p>	[1]	<p>Mark first response only</p>
(c)	<p>One mark for:</p> <p>Bruises/contusions</p>	[1]	<p>Mark first response only</p>
(d)	<p>One mark for:</p> <p>Golfers elbow/tendonitis</p>	[1]	<p>Mark first response only</p> <p>Do not accept: chronic injury or golfer's arm</p> <p>Accept: 'overuse injury' = BOD</p>

Question	Answer	Marks	Guidance
3.	<p>Three marks for three from:</p> <ol style="list-style-type: none"> 1. Helps circulate blood/oxygen 2. <u>Gradually</u> reduce (body) temperature 3. <u>Remove</u> waste products/lactic acid (from muscles) 4. Reduces the risk of (muscle) pain/soreness/stiffness/ache/DOMS 5. Improves flexibility or elasticity of muscles 6. Helps prevent blood pooling 7. Aids recovery for next work out or use (by stretching muscles) 	[3]	<p>Do not accept: gradual lowering of the body's breathing/heart rate or help the body's transition back to a resting state.</p> <p>Do not accept: Prevents lactic acid build up = VG Point 3</p> <p>Do not accept: Loosens your muscles/joints = VG Point 5</p>
4. (a)	<p>Four marks for four from:</p> <ol style="list-style-type: none"> 1. A = Ask 2. A = Active 	[2]	
(b)	<p>Two marks for two from:</p> <ol style="list-style-type: none"> 1. (Ask) The player is asked/questioned about what happened/how they feel/are they in pain/where it hurts or occurs at the start of the on-field assessment 2. (Active) Can the player move the injured limb <u>themselves</u>/non weight bearing exercise or occurs towards the end of the on-field assessment 	[2]	<p>Ask – are they ok/what is wrong = BOD</p> <p>Accept 'see if <u>they</u> can move it' if they refer to <u>injured area</u> in the 'ask' part of the question - BOD</p> <p>To try and get them to move the injured area = BOD</p> <p>Do not accept: descriptions of 'strength' such as can they put weight on injured limb = VG</p>
5.	<p>One mark for:</p> <p>(d) Nutrition</p>	[1]	

Question	Answer	Marks	Guidance
6.	<p>Six marks for six from:</p> <ol style="list-style-type: none"> 1. <u>Heighten/control/optimum</u> arousal levels or the player will be in the zone or control/lower aggression 2. (E.g.) Player does not retaliate/make unnecessary contact with opponents/make careless tackles 3. <u>Increase</u> motivation or the player will be more determined/committed/ have more self-belief 4. (E.g.) The player will not pull out of tackles 5. Use of mental rehearsal/mentally prepared or the player will visualise themselves/imagery helps make the correct decisions 6. (E.g.) Mistakes are minimised so less chance of using the stick in a dangerous manner 7. <u>Increases</u> confidence or reduces nerves/worry/stress/anxiety 8. (E.g.) The player won't be thinking of getting hurt in a tackle 9. Reaction time is improved/quicker 10. (E.g.) Tackles are well timed or no late tackles 	[6]	<p>Do not accept: improving focus/concentration (in question)</p> <p>Even numbers are practical examples required for maximum marks</p> <p>Practical examples do not have to relate to hockey. Accept reference to examples without a named sport and examples relating to other sports</p> <p>Accept: They will be motivated for Point 3</p> <p>Practical examples must link to how injury might be reduced</p> <p>Do not accept: Get into the right mindset/frame of mind = VG</p> <p>Increase aggression = VG Point 1</p> <p>Accept: Helps confidence = Point 7</p>
7. (a)	<p>One mark for:</p> <ol style="list-style-type: none"> 1. (Chances/safety) - Minimising/reduced/evaluate the chances of injuries/accident occurring or keeps performers safe/make sure equipment or venue is safe 2. (Checking) - Identify/check/hazards or assess possibilities of an accident occurring 3. (Actions) – Actions/measures taken to avoid/prevent/reduce accident/injury or remove hazards 4. (Level of hazard) - Hazards can be assessed as low/medium/high 	[3]	<p>Do not accept: Assess risk or awareness of risks or remove risks</p> <p>Do not accept: Avoids injury = VG Point 1</p> <p>Accept relevant examples.</p> <p>Safety check = Point 1</p>

Question	Answer	Marks	Guidance
(b)	Three marks for three from: 1. Age 2. Sex/gender/male/female 3. Previous injury/fractured leg 4. Fitness levels/medical condition/epilepsy 5. Experience/not played contact rugby before	[3]	Do not accept: any other individual variables as question states using information in table
(c)	Two marks for two from: 1. (Poor) coaching/supervision/communication skills or adhering to rules/regulations 2. <u>Protective</u> equipment/gumshields/padded post protectors/goalposts 3. Clothing 4. Footwear 5. Lack of safety checks/emergency action plans 6. <u>Uneven</u> playing surface or litter (on pitch)	[2]	Do not accept: any extrinsic factors contained within the table as question states other than the information in the table. This includes: Type of activity/rugby/contact Environmental - Weather/hot and sunny/dry rugby pitch/playing surface or pitch = VG (on it's own) Other participants/players Equipment - performance Safety hazards = VG Do not accept: Slippy surface as the weather is hot and the pitch is dry
(d)	One mark for: 1. Size of group/50 people (22 male and 28 female)/How many people 2. Age of group/12-22 3. Experience/low/tag rugby 4. (Individual) fitness levels/medium fitness 5. Medical conditions/epilepsy or previous injury/fracture 6. Environmental factors/hot and sunny/facilities/rugby pitch	[1]	Mark first response only Do not accept any other factors as question states using information in table

Question	Answer	Marks	Guidance
8. (a)	<p>One mark for:</p> <p>Apply pressure/force (to injury to prevent further blood loss) or give support (to an injured limb)</p>	[1]	<p>Do not accept: Compress the injury To push something against the injury = VG</p> <p>Pressure on it's own = BOD</p>
(b)	<p>One mark for:</p> <p>Sprain/strain/cut/abrasion/simple or closed fracture</p>	[1]	<p>Do not accept any chronic injuries such as golfers elbow/tendonitis etc</p> <p>Soft tissue injury = VG</p>
(c)	<p>One mark for:</p> <p>Bandaging/taping/splint</p>	[1]	<p>Do not accept: Plaster = VG</p>
(d)	<p>One mark for:</p> <p>Massage</p>	[1]	
9.	<p>One mark for:</p> <p>Name: (Achilles) tendonitis/shin splints/runners knee/blisters</p> <p>One mark for:</p> <p>(Cause) Overuse/continuous stress on the legs/tend to develop over a period of time/<u>excessive</u> running or running for an extended period of time or increasing training intensity or changing the surface they train on e.g. moving from grass to road running or training/running on hard ground or poor running technique</p>	[2]	<p>Mark first response only</p> <p>Mark first response only</p> <p>Do not accept: Long distance running (in question)</p> <p>Accept correct cause of injury even if name of chronic injury incorrect</p> <p>Accept: Running too much = BOD Repeated pressure on same area = VG</p> <p>Accept: friction/rubbing but only for responses that have given blisters as the injury</p>

Question	Answer	Marks	Guidance
10. (a) (i) (ii)	Two marks for two from: 1. Tingling/pins and needles 2. Loss of senses/eyes rolling/unusual smells or tastes/blurred vision 3. Lip smacking/foaming at mouth 4. Feeling events have happened before/déjà vu 5. Intense emotions 6. Rubbing hands/fidgeting 7. Vacant episodes/blank staring/confusion/unresponsive/loss of consciousness or memory 8. Losing control of bladder 9. Random noises/laughter (iii) One mark for: Diabetes	[3]	Do not accept: Fit/seizures/muscle spasms or equivalent such as shaking/jerking/repetitive movements
(b)	One marks for: Give them sugar/fruit juice/sweets/glucose (tablets)/glucagon (injection)	[1]	Accept all relevant answers: e.g. sugary tea
11. (a)	Two marks for two from: Component: Mobility Exercise: Arm swings/hip circles/leg swings	[2]	Mark first response only (if list given) Accept: any other relevant mobility exercise Windmill your arms = BOD
(b)	Two marks for two from: Component: Pulse raising Exercise: Jogging/cycling/skipping	[2]	Mark first response only (if list given) Accept: any other relevant pulse raiser

Question	Answer	Marks	Guidance
12.	<p>One mark for:</p> <p>(c) Environmental conditions</p>	[1]	
13. (a)	<p>One mark for:</p> <p>False</p>	[1]	
(b)	<p>One mark for:</p> <p>False</p>	[1]	
14.	<p>Two marks for two from:</p> <p>(i) Type: Static</p> <p>(ii) Example: Hamstring/quadriceps/gastrocnemius/calf (stretch)</p>	[2]	<p>Mark first response only</p> <p>Do not accept: Maintenance stretching</p> <p>Accept correct examples even if type is incorrect.</p> <p>Do not accept: Any examples of dynamic stretching/exercise e.g. lunges</p> <p>Do not accept: Touching toes = VG Accept: Touching toes with straight legs = BOD</p> <p>Accept any recognised static stretch that focuses on leg muscles.</p> <p>Accept quad stretch</p>

Question	Answer	Marks	Guidance
15.	<p><u>Levels of response</u></p> <p>Level 3 (7-8 marks) A comprehensive response: - shows detailed knowledge and understanding - makes many points, many of which are well developed. - is well structured and consistently uses appropriate terminology. - there are few if any errors in grammar, punctuation and spelling.</p> <p>Level 2 (4-6 marks) A competent response: - shows good knowledge and understanding. - makes some valid points a few of which may be developed. - is reasonably well structured and uses some appropriate terminology. - there are occasional errors in grammar, punctuation and spelling.</p> <p>Level 1 (1-3 marks) A basic response: - shows limited knowledge and understanding. - makes some basic points which are rarely developed. - has limited coherence and structure with little or no use of appropriate terminology. - errors in grammar, punctuation and spelling may be noticeable and intrusive.</p> <p>0 = nil response or no response worthy of credit.</p>	[8]	<p>Differentiating between levels look for:</p> <p>Level 3:</p> <ul style="list-style-type: none"> • <i>Most symptoms are clearly identified/developed (4+) and all components are developed</i> • <i>At the top of this level all components of EAP are developed with use of examples linked to dealing with an asthma attack</i> • <i>Very few QWC errors</i> <p>Level 2:</p> <ul style="list-style-type: none"> • <i>Some description rather than identification</i> • <i>May be three or more identified/developed points for symptoms</i> • <i>All EAP components identified but not all are developed with examples linked to an asthma attack</i> • <i>At the top of this level at least three symptoms and two EAP examples</i> • <p>Level 1:</p> <ul style="list-style-type: none"> • <i>Simple identification rather than description</i> • <i>Most of response are symptoms of asthma or EAP</i> • <i>At the top of this level at least one or two symptoms and/or one or two components of EAP</i> • <i>2 marks for any credit worthy statements related to both symptoms and EAP</i> • <i>1 mark for any credit worthy statement related to symptoms/EAP</i> <p>Always indicate the level at the end of the response.</p>

Question	Answer	Marks	Guidance
	<p>Indicative content Candidate responses are likely to include: (relevant responses not listed should be acknowledged) Numbered points = knowledge / understanding Bullet points = likely to be development of knowledge</p> <p><u>Symptoms</u></p> <ol style="list-style-type: none"> 1. Coughing <ul style="list-style-type: none"> • More frequently 2. Wheezing <ul style="list-style-type: none"> • Whistling sound when breathing out • Not always able to tell if someone is wheezing 3. Shortness of breath <ul style="list-style-type: none"> • Performer struggling to breath normally/get air into the lungs • Heavy breathing • Difficulty speaking • Panic 4. Tightness in chest <ul style="list-style-type: none"> • Performer holding onto their chest • Feels like a heavy weight on chest whilst trying to breathe • Panic 5. Skin/Face/Lips <ul style="list-style-type: none"> • Pale • Clammy • Grey/blue (if attack severe) 6. Not everyone will get all of the symptoms 7. The symptoms of points 1-4 can range from mild to more serious 		

Question	Answer	Marks	Guidance
	<p>8. Symptoms can be caused by different triggers including exercise, cold weather, pollen, colds and flu.</p> <ul style="list-style-type: none"> • Inflamed airways • Mucus production <p><u>Emergency Action Plan</u></p> <p>9. Emergency personnel</p> <ul style="list-style-type: none"> • First responder/first aider/coach • Important they keep calm • Calm/reassure the person having the attack • E.g. – Coach reassuring the performer, first aider calls for an ambulance, first responder encourages performer to control breathing/take slow/steady breaths <p>10. Emergency communication</p> <ul style="list-style-type: none"> • Telephone/emergency numbers/emergency services • 999/ambulance called for as attack is severe • Parents/carers contacted • E.g. - Coach using mobile phone to call 999/parents <p>11. Emergency equipment</p> <ul style="list-style-type: none"> • First aid kits/evacuation chair • Use of inhaler/spacer • Blankets to keep person warm whilst waiting for emergency services • E.g. – Coach encouraging performer to use inhaler as required 		<p>Some examples may overlap all three EAP areas.</p> <p>Look for use of EAP in response to asthma and the severity of the asthma attacks as possible Level 3 indicators</p> <p>Do not accept: Contacts as the component for Emergency communication but fine as a knowledge/development point</p>

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