

Mark scheme

Qu		Marks	Commentary
1 (a)	A. Reduce weight/ fat/ obesity/cholesterol; B. Strengthen heart/reduce chance of heart attack/coronary risk factors; C. Improve social/physical/mental wellbeing	1	Requires specific benefit to gain credit Increase longevity/better health/feel good – too vague B – any improved physiological factor credited C – need 2 out of 3 factors
1 (b) (i)	A. Nerve impulses to respiratory (control) centre/ medulla/ autonomic nervous system; B. Phrenic /sympathetic nerve/impulses <u>to</u> breathing muscles C. Diaphragm/ intercostal muscles; D. <u>Deeper</u> breathing/increase tidal volume; E. Use of sternocleidomastoid/scalenes/pectoralis minor/rectus abdominus muscles	3	A. Do <b>not</b> accept RCC  D – Do not accept 'Faster breathing' as is in question
1 (b) (ii)	A. Difference between oxygen content of arterial and venous blood/how much O <sub>2</sub> is extracted and used by muscles;  B. <u>More</u> oxygen is <u>extracted</u> by the muscles/lungs; C. Oxygen is used/needed for energy/ATP production/ respiration;	2	Sub max 1 mark B – Needs eq – accept needed/used by muscles
1 (c)	A. Exercise increases temperature; B. Exercise causes increased CO <sub>2</sub> /acidity in blood/lower pH/increased H ion concentration; C. Curve shifts to right; D. More oxygen <u>disassociates</u> from haemoglobin/ reduced affinity for oxygen;	3	
1 (d)	A. Venous return increases B. (Skeletal pump) – increased muscle contractions compress veins and push blood towards heart; C. One way valves in veins/to prevent backflow; D. (Respiratory pump) – greater breathing movements alter pressure in thorax compresses veins - assist flow back to heart; E. Running – heart beating faster - suction pump of heart.	3	Do not accept 'changes'  Cause and effect

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2 (a)	<table border="1"> <thead> <tr> <th colspan="2">Hip</th> </tr> </thead> <tbody> <tr> <td>Main agonist</td> <td>A. Gluteals/hamstrings;</td> </tr> <tr> <td>Type of muscle contraction</td> <td>B. Eccentric;</td> </tr> <tr> <td>Joint action</td> <td>C. Flexion;</td> </tr> </tbody> </table>	Hip		Main agonist	A. Gluteals/hamstrings;	Type of muscle contraction	B. Eccentric;	Joint action	C. Flexion;	3	Accept first term only A. Accept Latin names of individual muscles -biceps femoris/semitendinosus/semimembranosus/gluteus maximus B. no alternatives C. Accept extension <u>to</u> flexion
Hip											
Main agonist	A. Gluteals/hamstrings;										
Type of muscle contraction	B. Eccentric;										
Joint action	C. Flexion;										
2 (b)	A. Maintaining/keeping <u>stable at equilibrium</u> B. <u>Centre of gravity/mass</u> over base of support; C. Static or Dynamic.	2	A and B – Required terms								
2 (c)	A. Obese = 20%/30% + body fat / BMI >30/40; B. Limited because measurement is inaccurate/subjective/difficult to measure/could have big muscles/large frame/physique	2	Definition must be objective – 'lots of fat'/'overweight' = wrong								
2 (d) (i)	A. Correct numbers (70 x 70)/written equation $Q = SV \times HR$ ; B. Correct units – (4900) mls/min or (4900) mls.min <sup>-1</sup> or (49) dm <sup>3</sup> /min or (49) dm <sup>3</sup> .min <sup>-1</sup> or (49) L/min or (49) L.min <sup>-1</sup>	2	A – formula or maths B – units								
2 (d) (ii)	A. Increased venous return; B. Greater diastolic filling/preload; C. Cardiac muscle stretched/elastic; D. Greater/stronger/more powerful/ force of contraction; E. Increased ejection fraction;	3	A – do not accept 'more blood back to heart'  E – do not accept 'increase stroke volume' – in question								

Qu		Marks	Commentary
3 (a) (i)	A. Intrinsic from within/inside <b>and</b> extrinsic from outside B. Intrinsic = drive/urge from within	1	If say 'intrinsic from within and extrinsic is not' = too vague
3 (a) (ii)	A. Intrinsic motivation gives performer a sense of <u>control</u> over performance; B. (Excessive) extrinsic may reduce/lead to loss of (intrinsic) motivation/play for prize, not love of game; C. Performers demand increasing extrinsic rewards/some rewards unimportant/lose their value D. Failure to achieve extrinsic reward may lead to loss of (intrinsic) motivation/if no reward, give up; E. Extrinsic motivation controls or manipulates behaviour/overly reliant F. (Excessive) need for extrinsic – too much pressure/ win at all costs/leads to cheating;	3	'Extrinsic is no good' is too vague as it is in the question A – Concerned with self
3 (b)	A. Distributed sessions/rest/recovery periods; B. Resetting of goals/tasks more challenging/ competition against opposition; C. Offering extrinsic rewards/encouragement/praise/ positive reinforcement; D. Using mental rehearsal/imagery/visualisation; E. Provide feedback/visual guidance; F. Use of whole-part-whole/part method/breaking the skill down; G. Ensure performer focuses on appropriate cues; H. Make practices more varied/more interesting/fun/ enjoyment; I. Make performer fitter; J. Better quality coaching/new coach/change coaching method; K. Concept of plateau in performance explained to performer;	3	C – not motivation – more detail – how to motivate
3 (c) (i)	A. Memory trace <b>and</b> Perceptual trace	1	Required terms only
3 (c) (ii)	A. Memory trace (MT) = plan of action/motor programme/ acts as reference standard/ initiates movement; B. MT - based on experience/practice/previous performance; C. Perceptual Trace - directs/controls current movement; D. Learning involves development of PT through feedback; E. Two (memory and perceptual) are compared; F. If they match/correspond - movement continues; G. Mismatch produces error corrections (during performance); H. Adjusted memory trace = new motor programme	3	

Qu		Marks	Commentary
4 (a)	<p>A. Motor ability – movements/actions/performing task/ motor programmes;</p> <p>B. Eg Leg/arm/body actions/muscle contractions;</p> <p>C. Perceptual ability – receiving/recognising/selecting/ deciding on information from senses;</p> <p>D. Eg detecting/seeing where team mates/opposition are positioned;</p>	3	<p>A – Movements/actions</p> <p>B – Do not credit 'passing'</p> <p>C – is about detecting but not perceiving</p> <p>D – What's detected when passing</p>
4 (b)	<p>Short-term sensory store</p> <p>A. Receives information <u>from</u> display/surroundings/ environment/equiv;</p> <p>B. From sensors/sense organs/egs/equiv.</p> <p>C. Too much/lots of information;</p> <p>D. Information is filtered/selective attention;</p> <p>E. Attended information enters short-term memory</p>	4	Sub max 2
	<p>Long-term memory</p> <p>F. Store of past experiences;</p> <p>G. As Motor programme/schema/plan of action/skills/ passes;</p> <p>H. Mental image of movement to be performed;</p> <p>I. Correct information/meaningful/important/rehearsed/relevant information stored;</p> <p>J. Information in to/from Short Term Memory;</p>		Sub max 2
4 (c) (i)	<p>A. Learning based on strengthening the relationship between stimulus and response/S-R bond;</p> <p>B. Increases the likelihood of the desired response reoccurring/equiv</p> <p>C. Trial and error learning;</p> <p>D. Learner associates consequences of previous action with current situation;</p> <p>E. Shaping;</p> <p>F. Manipulation of the environment to get the desired action;</p> <p>G. Appropriate example of shaping – use of targets/lower baskets to give success/make practice easier/etc;</p>	3	<p>C – required term</p> <p>D – explanation</p> <p>E – required term</p> <p>F – explanation</p>
4 (c) (ii)	<p>A. Eg: named team game, identified reinforcer and identified criticism</p> <p>B. (Negative reinforcement) – when the adverse stimulus is withdrawn when the desired response occurs;</p> <p>C. Makes required behaviour more likely/strengthens S-R bond;</p>	2	<p>Sub-max 1</p> <p>Use of punishment is incorrect</p> <p>A – eg in a rugby match, the coach criticises poor play</p> <p>B – eg coach stops criticising when skill is successful</p>

Qu		Marks	Commentary
5 (a) (i)	A. Improve health <u>and</u> fitness; B. Improve discipline/obedience/equiv; C. Familiarity with weapons; D. Preparation for work/war;	2	A – Both required  D – Not military as in the question
5 (a) (ii)	A. <u>Educational</u> gymnastics/discovery/problem-solving/creativity/child-centred/Heuristic learning/dance/group work; B. Moving and growing/planning the programme; C. Rebuilding of <u>facilities</u> with apparatus/equipment/playing fields; D. Greater range of activities; E. De-centralised/greater teacher decisions/flexibility of content and/or delivery style; F. Specialised (PE) teachers; G. Greater emphasis of skill/health development.	4	B – required terms  F – 'Teachers' is too vague
5 (b) (i)	A. Appreciation/understanding of the natural environment/issues; B. Trust/awareness in others/communication/teamwork/ social skills/co-operation; C. Self-reliance/decision-making/leadership/problem-solving/confidence; D. Excitement/know own limits/courage/bravery/determination/overcome fear/self-awareness/experience perceived risk; E. Cross curricular opportunities/field trips/ geography, biology etc; F. Acquire new/different skills, eg/survival/map reading/safety/ awareness of danger/lifelong learning; G. Improving health/fitness.	3	A – Aesthetic/philosophic  B – Others/social  C – Own decisions  D – Adrenaline hit  E – Other subjects  F – Develop specific skills – improving skills on its own is insufficient
5 (b) (ii)	A. Lack of time/curriculum pressure; B. Lack of finance/transport costs; C. Lack of suitable situations/facilities/inner city/location; D. Lack of suitably qualified/experienced/motivated staff; E. Safety concerns/legislation.	3	B – Not just lack of transport

Qu		Marks	Commentary
6 (a)	<p>A. General point about sexual discrimination; B. Effects of lack of media coverage/role models/<u>female</u> coaches;</p> <p>C. Accepted gender role/stereotyping/traditional role/child care/family commitments D. Inappropriate activity/physiological myths/ poor body image; E. Sport as a male preserve/keep women out; F. Lower (disposable) income/expense; G. Less time available; H. Less resources/lower funding/prize money/sponsorship opportunities/fewer facilities/reduced access/fewer female clubs/ opportunities;</p>	4	<p>Do <b>not</b> accept lack of transport</p> <p>C – accept examples of traditional roles</p> <p>E – idea that sport is for men F – financial limitations G – time constraints H – lower extrinsic rewards</p>
6 (b)	<p>A. Environmental conditions, eg dry, warm, comfortable, indoors B. Individual/don't rely on a team C. Can be played casually/recreationally/socially/competitively/own pace D. Can maintain health and fitness E. Increased provision in schools/leisure centres/clubs F. Lifetime activity/suitable for all ages; G. Non-contact/not as aggressive/ non-strenuous; H. Socially acceptable/women traditionally played badminton/positive role models, eg Gail Emms</p>	4	<p>C – about when and how played</p> <p>E – do <b>not</b> accept more facilities/opportunities</p> <p>G – is about the physicality of the activity</p>
6 (c)	<p><b>Characteristics</b></p> <p>A. Run by members/committee/AGM/un-paid volunteers/parents/community; B. Possibly on trust/charity basis/limited company; C. Financed by members' fees/fund-raising/bar-take/sponsorship/donations/grants/lottery; D. Runs on profit-loss/profit not an overriding concern/money placed back into club.</p>	4	<p>A – not just run by volunteers</p> <p>C – about how money is raised D – about what you do with the money</p> <p>Sub max 3</p>
	<p><b>Goals</b></p> <p>E. Provide for grass roots of sport; F. Tries to increase participation and equal opportunities G. Improve performance levels in their sport/look for talent; H. Meet up with people with similar interests/social.</p>		<p>Sub max 3</p>

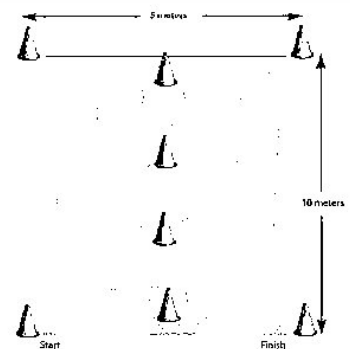
7.

A. Power – Sergeant/ vertical jump test	A. Standing long/broad jump	A. Margaria (Kalamen) (power/stair) climb Test	A. PWC <sub>170</sub> Test	A. (40) metre sprint
B. Preparation – chalks/licks his/her finger tips/ use measuring device	B. Stand behind line marked on the ground	B. Run up flight of (12) stairs	B. Pedal on exercise bike/ergometer	B. Stand behind line marked on the ground
C. Pre-jump – reaches up as high as possible with one hand and marks wall/ pushes green scale up wall with tips of fingers	C. A two foot take-off	C. (6m) run up before stairs	C. Increase resistance/ power every 2/3 minutes	C. Sprint/run/ move as fast as possible
D. Jumps as high as possible	D. Jump as far as possible, landing on both feet	D. Three stairs at a time	D. Measure heart rate at each increase in power	D. Measure time taken
E. Distance above stretch height = power measure	E. Distance achieved to nearest landing point = power measure	E. Calculate power from time and weight ( $P = (\text{Mass} \times \text{Distance}) \times 9.8 / \text{time}$ )	E. Calculate power output for HR of 170	E. Calculate power output from time and mass/weight

A. Must be correct name of test – Do **not** accept jump test or stair test or cycling test

B. C. and D. require detailed description

E. Idea of how power is actually calculated

<p>F. Illinois agility run</p> <p>G. 10 metres long / 60 metres in total</p> <p>H. Subject starts lying down (on their front)</p> <p>I. Subject sprints and weaves (accept/expect diagram)</p> <p>J. Time taken/measured in seconds = agility</p>  <p>K. Intrinsic/kinaesthetic – from within - performer feels own responses/reinforces</p> <p>L. Extrinsic – from outside/coach/crowd helps motivate/can correct errors</p> <p>M. Concurrent – during skill action – can motivate/reinforce;</p> <p>N. Terminal – following skill performance – can motivate/reinforce/correct;</p> <p>O. Positive – praise and acknowledgement of a correct or successful action - motivates;</p> <p>P. Negative – critical comments about how a movement was incorrect or could have been better;</p> <p>Q. Immediate – feedback given straight after performance to motivate/correct/reinforce;</p> <p>R. Delayed – feedback that is given some time after the event to reinforce/correct;</p> <p>S. Knowledge of results (KR) – feedback in the form of information about how successful the movement was in accomplishing the task/feedback about the outcome;</p> <p>T. Knowledge of Performance (KP) – information given as feedback as to how well the movement was executed, regardless of end result - correct/reinforce</p>	<p>F – correct name only</p> <p>G – Some idea of distances involved</p> <p>H – Not standing start</p> <p>I – idea of different techniques used/ change direction too vague</p> <p>J – some idea of what represents agility</p> <p>Feedback responses require name and description AND how it helps performer - command word is EXPLAIN</p> <p>Majority motivate/reinforce/correct errors</p> <p>Eg:</p> <p>K – intrinsic - from within - feels movement – all three parts required for credit</p> <p>S. Do <b>not</b> accept that KR is knowledge of results</p> <p>T. Do <b>not</b> accept that KP is knowledge of performance</p>
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<b>Band Range</b>	<b>Band descriptors</b>
<b>10 – 12</b>	<ul style="list-style-type: none"> <li>• Addresses all aspects of question, demonstrating wide range of depth and knowledge</li> <li>• Expresses arguments clearly and concisely</li> <li>• Good use of examples to support answer</li> <li>• Few errors in their spelling, punctuation and grammar, and correct use of technical language</li> </ul>
<b>7 – 9</b>	<ul style="list-style-type: none"> <li>• Addresses most aspects of question, demonstrating clear level of depth and knowledge</li> <li>• Attempts to express arguments clearly and concisely</li> <li>• Uses examples to support answer</li> <li>• Few errors in their spelling, punctuation and grammar, and correct use of technical language, although sometimes inaccurately</li> </ul>
<b>4 – 6</b>	<ul style="list-style-type: none"> <li>• Addresses some aspects of question, but lacks sufficient depth and knowledge</li> <li>• Limited attempt to develop any arguments or discussions, normally vague or irrelevant</li> <li>• Attempts to use examples although not always relevant</li> <li>• Errors in spelling, punctuation and grammar, and limited use of technical language</li> </ul>
<b>1 – 3</b>	<ul style="list-style-type: none"> <li>• Addresses question with limited success</li> <li>• Little or no use of examples</li> <li>• Major errors in their spelling, punctuation and grammar, and little use of technical language</li> </ul>

<i>Number of correct responses</i>	<i>Level achieved</i>	<i>Discriminator</i>	<i>Initial mark</i>	<i>Optional QWC/ coverage</i>	<i>Potential final mark</i>
13+	4	15+ items	11	+1	11 or 12
		13 or 14 items	10	+1	10 or 11
9-12	3	11 or 12 items	8	+1	8 or 9
		9 or 10 items	7	+1	7 or 8
5-8	2	7 or 8 items	5	+1	5 or 6
		5 or 6 items	4	+1	4 or 5
1-4	1	3 or 4 items	2	+1	2 or 3
		1 or 2 items	1	+1	1 or 2
0					0