

Physical Education

General Certificate of Secondary Education

Unit **B453**: Developing Knowledge in Physical Education

Mark Scheme for January 2011

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Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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Section A Multiple Choice			
Question Number	Expected Answer	Mark	Rationale/Additional Guidance
1	Which one of the following is an example of a hinge joint? (c) The knee joint	[1]	
2	Which one of the following best describes fartlek training? (b) A varied, continuous training method with speed and endurance	[1]	
3	Which one of the following is a government initiative to encourage healthy eating? (c) Eat at least five portions of fruit and vegetables per day	[1]	
4	Which one of the following is an effect of lactic acid during an exercise session? (b) Causes muscle fatigue during exercise	[1]	
5	Which one of the following is an example of trial and error when learning movement skills? (c) Practising shooting in hockey to get the right technique	[1]	
6	Which one of the following is a joint problem? (a) Osteoarthritis	[1]	

Question Number	Expected Answer	Mark	Rationale/Additional Guidance
7	<p>SMART target setting is often used to improve performance in physical activities.</p> <p>Which one of the following does the <u>S</u> in the SMART principle stand for?</p> <p>(c) Specific</p>	[1]	
8	<p>Which one of the following is a role of the National Governing Bodies in sport?</p> <p>(a) To ensure health and safety guidelines are in place</p>	[1]	
9	<p>Which one of the following is a potential hazard in a sports hall?</p> <p>(b) Water that has been spilled causes the floor to be slippery</p>	[1]	
10	<p>Which one of the following is a short term effect on the heart during an exercise session?</p> <p>(d) Increase in cardiac output</p>	[1]	
11	<p>Which one of the following is an example of a ball and socket joint?</p> <p>(c) Shoulder joint</p>	[1]	
12	<p>Which one of the following muscle groups are mainly responsible for a good performance in the long jump?</p> <p>(d) Quadriceps</p>	[1]	

Question Number	Expected Answer	Mark	Rationale/Additional Guidance
13	Which one of the following best describes the intensity element of the FITT principle of training? (a) How hard you work in an exercise class	[1]	
14	Which one of the following is <u>not</u> a good reason for goal setting? (c) To make the game more realistic	[1]	
15	Which one of the following is a major influence of the media on levels of participation in physical activities? (a) Raises interest of many people in sport	[1]	
	Total	[15]	

Question Number	Expected Answer	Mark	Rationale/Additional Guidance
	11 Children and teenagers should get at least one hour a day of moderate physical activity. (Can be achieved by a mixture of play/PE/games/dance/cycling/a brisk walk to school/sports/various outdoor activities or equivalent.) 12 School based initiatives 13 Eat well plate	1 1 1 1 [3]	
17	Identify and describe <u>two</u> functions of the skeletal system. Four marks for four from: 2 marks max for i/d (odd numbers) 2 marks max for description (even numbers) 1 Shape/support/structure 2 To help posture/keep shape of body/hold up 3 Blood cell production 4 Blood cells important for energy/minerals/carrying oxygen/to fight infection 5 Protection 6 Avoids injury/allows risk free movement/protects (vital) organs 7 Movement/leverage 8 Provides ability to move/lift/throw etc in physical activities/muscle attachment 9 Mineral store 10 Stores minerals for health such as calcium	1 1 1 1 1 1 1 1 1 1 [4]	Do not accept: 'enables to move' for a description of movement (need to be more specific)

Question Number	Expected Answer	Mark	Rationale/Additional Guidance
18	<p>The main training principles are overload; specificity; progression and reversibility.</p> <p>Describe <u>three</u> of these training principles and give a practical example for each.</p> <p>Six marks for six from: One mark max for description One mark max for practical example/equivalent</p> <p>Overload:</p> <p>1 Work harder than normal/puts body under stress/adaptation will follow/comes about by increasing frequency/intensity/duration.</p> <p>2 Eg Lifting heavier weights</p> <p>Specificity:</p> <p>3 Training should be particular/relevant to needs/relevant energy system used/relevant muscle groups used.</p> <p>4 Eg choosing main muscle groups used in activity to train for strength.</p> <p>Progression:</p> <p>5 (Gradually) becomes more difficult/demanding/challenging/once adapted then more demands on body (suggest time)</p> <p>6 Eg Doing more repetitions of sprints at each training session</p> <p>Reversibility:</p> <p>7 Performance/fitness can deteriorate if training/exercise stops/decreases.</p> <p>8 Eg If you stop endurance training your stamina will reduce in time.</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>[6]</p>	<p>Do not accept Overload is working too hard</p> <p>Accept Overload is lifting the heaviest weight you can as BOD</p> <p>Do not accept specific on its own without explanation</p>

Question Number	Expected Answer	Mark	Rationale/Additional Guidance
19	<p>The British Olympic Association is a national organisation involved in promoting sport and participation in physical activities.</p> <p>Identify <u>three</u> other types of organisations that promote participation in physical activities.</p> <p>Three marks for three from:</p> <ul style="list-style-type: none"> 1 Local authority 2 Schools 3 Private enterprise/commercial companies/National Lottery 4 Voluntary organisations/sports/local clubs 5 National organisations (other than the BOA)/NGB's/Sport England Sport UK/CCPR 6 International Olympic Committee/IOC/International federations eg FIFA 	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>[3]</p>	<p>Accept: An example of commercial promotion for max of one mark eg 'Tesco's Active'</p>
20	<p>Explain how schools might encourage an active, healthy lifestyle.</p> <p>Six marks for six from:</p> <ul style="list-style-type: none"> 1 Fitness/exercise/activity promotional campaigns/educate/inform parents/(health) posters/PE activity days/sports days 2 Make physical activity enjoyable/inspire/use positive reinforcement/praise (for following a healthy lifestyle) 3 Through healthy eating/healthy school meals/assemblies 4 Not allowing 'junk food/drink' machines/stopping/controlling poor health habits 5 Through the health/PSHE curriculum/health awareness programmes 6 Through PE lessons/National Curriculum/compulsory PE lessons/regular exercise/varied PE programme 7 Sports College status 8 Examination courses/qualifications 9 Extra-curricular clubs/teams 	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>Accept: names of examination/qualification courses GCSE/BTEC</p>

Question Number	Expected Answer	Mark	Rationale/Additional Guidance
	10 Trips/skiing etc 11 Links with clubs/agencies 12 Use of role models/speakers coaches/teachers 13 Playgrounds/playtime/facilities/equipment available (for exercise)	1 1 1 1 1 [6]	

Question Number	Expected Answer	Mark	Rationale/Additional Guidance
21	<p>Using Fig. 1:</p> <p>(i) Name muscle X (ii) Name muscle Z (iii) Identify which muscle is the agonist (iv) Identify which muscle is the antagonist</p> <p>Four marks max for identifying and naming</p> <p>1 X = Antagonist/Tricep 2 Z = Agonist/Bicep 3 Agonist is the biceps (brachii)/Z 4 Antagonist is the triceps (brachii)/X</p>	<p>1 1 1 1 [4]</p>	
22	<p>Describe <u>four</u> long term effects of exercise on muscles.</p> <p>Four marks for four from:</p> <p>1 Increase in size (of muscle fibres)/hypertrophy of muscles 2 Increase in strength (of muscle fibres)/tone/power 3 Increase in muscular endurance/last longer 4 Increase in flexibility(of muscle)/elasticity 5 Increased tolerance to lactic acid 6 Increased rate of removal of lactic acid 7 Greater potential for energy production/more energy available 8 Size/number of mitochondria increased 9 Increase in myoglobin (within muscle cells) 10 Increase in capillaries in muscles/more oxygen/haemoglobin to (working) muscles 11 Helps prevent injury/helps recovery from injury 12 Causes injury/strains/damage/can decrease mobility</p>	<p>1 1 1 1 1 1 1 1 1 1 [4]</p>	<p>Able to cope with more work = vague</p> <p>Do not accept: Causes arthritis/osteoporosis</p>

Question Number	Expected Answer	Mark	Rationale/Additional Guidance
23	<p>Describe ways in which you might reduce the potential risks in outdoor, adventurous activities.</p> <p>Five marks for five from:</p> <ul style="list-style-type: none"> 1 Activity supervised/qualified instructor/go with someone else/being trained/know what you are doing 2 Correct clothing/footwear/shoes/properly fastened clothing/fits well 3 Personal protective equipment/the right equipment 4 Wear sun tan lotion 5 Risk assessment/knowledge of risks of activity 6 Follow health and safety procedures/take first aid kit/regulation of activity/safety briefing 7 Check equipment (for faults) 8 Take the climate/weather/environment/surfaces into account (when planning/continuing)/keep track of where you are/checking the area 9 Activities suitable for the age/ability/experience of the participants 10 Lift and carry equipment correctly 11 Exercise/compete at appropriate level/don't overdo it 12 Warm up/cool down/stretching exercises 13 Correct technique/skills 14 Take telephone/tell someone where you are going 15 Cover any cuts/abrasions (with a plaster) 16 Rehydration/eat (regular) snacks 	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>[5]</p>	<p>Staying away from unsafe areas = risk assessment, point 5</p>
24	<p>Describe <u>four</u> ways in which continuous training can improve performance in physical activities.</p> <p>Four marks for four from:</p> <ul style="list-style-type: none"> 1 Improves fitness/stamina/(cv)endurance/you can keep going/increases energy levels 2 Can assist weight control/weight loss 	<p>1</p> <p>1</p>	<p>To stay fit = vague To get you fit = 1 mark</p>

Question Number	Expected Answer	Mark	Rationale/Additional Guidance
	3 Decrease in fatigue/less need for rest	1	
	4 Increase tolerance to lactic acid		
	5 Emulates/duplicates the 'real game' situation/prepares for competition	1 1	
	6 Reduces <u>resting</u> heart rate		
	7 Increases heart efficiency/or adaptations identified (other than reducing resting heart rate)	1	
	8 Improved efficiency of vascular shunt	1	
	9 Increases lung efficiency/better use of O ₂ /or adaptations identified	1 1	
	10 Increases muscular efficiency or adaptations identified		
	11 Reduces blood pressure	[4]	
	12 Reduces risk of health problems/or examples of these problems		Do not accept Reduces injury

Question Number	Expected Answer	Mark	Rationale/Additional Guidance
25*	<p>Explain how you might motivate someone to follow an active, healthy lifestyle</p> <p>Levels marked question</p> <p>Level 1 1–2 marks Candidates make only one or two valid points about motivation and describes only very superficially. There is little or no use of technical vocabulary and sentences have limited coherence and structure. There is much irrelevant material. Errors in grammar, punctuation and spelling may be noticeable and intrusive.</p> <p>Level 2 3–4 marks Candidates make some valid points about motivation with good knowledge and understanding. 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>Level 3 5–6 marks Candidates make many developed points about motivation. Candidate demonstrates excellent knowledge and understanding of the factors involved. Candidate gives relevant material that is clearly structured and using appropriate terminology and technical vocabulary. There are few, if any, errors in grammar, punctuation and spelling.</p>		<p>Examiners must indicate which level the answer is awarded as well as annotating and giving a mark to the response.</p> <p>The following are GUIDELINES ONLY. Refer to Level descriptors at all times.</p> <p>Tick each point found in the indicative content.</p> <p><u>However the number of ticks on their own do not indicate the level.</u></p> <p>View the number of ticks/points:</p> <p>Level 1</p> <ul style="list-style-type: none"> • Few strategies with little or no development of points • Descriptive lists rather than an explanation <p>Level 2</p> <ul style="list-style-type: none"> • Some different motivational strategies • Some development of points <p>Level 3</p> <ul style="list-style-type: none"> • A good range of motivational strategies including extrinsic and intrinsic • Points developed well • Health and activity/exercise likely to be covered

Question Number	Expected Answer	Mark	Rationale/Additional Guidance
25* cont.	<p>Indicative content – (Explain how you might motivate someone to follow an active, healthy lifestyle)</p> <ol style="list-style-type: none"> 1 Use of intrinsic and extrinsic methods 2 Give rewards/badges/accolades/praise 3 Make it fun/enjoyable/varied/interesting/exciting/competition 4 Set goals (SMART)/a plan of action 5 Encourage/persuade/educate/enthuse/inspire 6 Show the positive effects/show progress made 7 Give success/feeling of success 8 Show role models/lead by example 9 Show or educate about the detrimental effects of a poor lifestyle/poor health 10 Measure fitness/health to show need to change 11 Punish unhealthy/inactive behaviour 12 More information about healthy meals/eating well 13 Get them to join a club/get with others who may exercise/follow a healthy lifestyle/get them a personal trainer 	[6]	
	Total	[45]	
	Paper Total	[60]	

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