



GCSE

Physical Education

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

General Certificate of Secondary Education

Mark Scheme for June 2015

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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 used in the detailed Mark Scheme

	?	Unclear
	BOD	Benefit of doubt
	Cross	Incorrect
	L1	Level 1
	L2	Level 2
	L3	Level 3
	REP	Repeat
	Tick	Correct
	VG	Vague
	SEEN	Noted but no credit given
	S	S (indicates 'sub max reached')
	EG	Example
	K	Knowledge
	DEV	Development
BP	BP	Blank page

- Sub-maxes are indicated with **S**; the guidance section of the mark scheme shows which questions these are relevant to.
- K** and **DEV** used instead of ticks on question 25 to indicate where knowledge or development points from the indicative content have been made.
- On question 25, one K 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.

Section A – Multiple choice			
Question Number	Expected Answer	Marks	Guidance
1	c. Shoulder joint	[1]	
2	b. Triceps	[1]	
3	d. The Rugby Football Union	[1]	
4	d. Realistic and Measurable	[1]	
5	c. Serving in tennis and hitting it out but getting it right next time	[1]	
6	b. To lubricates joints	[1]	

Section A – Multiple choice			
Question Number	Expected Answer	Marks	Guidance
7	b. Decrease in resting heart rate	[1]	
8	a. Fitness can deteriorate if training stops	[1]	
9	c. This stabilises the movement at the joint	[1]	
10	d. Coverage of the Wimbledon Championships can encourage people to play tennis	[1]	
11	b. Stretching one muscle group for over five minutes	[1]	

Section A – Multiple choice			
Question Number	Expected Answer	Marks	Guidance
12	a. Concentrating on the take-off board when about to perform the long jump	[1]	
13	d. Moving both arms towards your body during the breast stroke	[1]	
14	c. Feeling that a golf shot has gone wrong even before you see where the ball has gone	[1]	
15	d. Running a healthy eating programme in the school canteen	[1]	
	Total	[15]	

Section B – Short Answer Questions			
Question Number	Expected Answer	Marks	Guidance
16	Three marks for three from: <ol style="list-style-type: none">1. Frequency2. Intensity3. Time	[3]	<ul style="list-style-type: none">• Do not accept type (in the question)• Accept: frequent, timed, time orientated (BOD)

Section B – Short Answer Questions			
Question Number	Expected Answer	Marks	Guidance
17	<p>Four marks for four from:</p> <ol style="list-style-type: none"> 1. The (artificial) surface or unforgiving or hard surface or synthetic surface 2. Reduce risk by wearing (the right trainers) or warning people of the hazard or other protective clothing 3. Uneven / broken / holes / badly maintained surface 4. Reduce by regular maintenance or checking 5. Surface slippery or frozen or wet 6. Reduce by wearing (the right) trainers or mopping up water and reducing the slippiness or (if frozen) leave to melt/dry or check the area or cover the area 7. Litter or (broken) glass/plastic or debris / syringes or rocks/stones/sticks/branches on surface 8. Reduce by regular cleaning/clearing up or the provision of litter bins or ban glass from area or regular checks 9. Animal faeces on surface or animals/dogs 10. Reduce by banning animals / dog walking or by clearing the mess up or by ensuring dogs are on a lead or shutting gates 11. Poorly maintained equipment or poor lighting 12. Reduce by regular maintenance or checking 13. Equipment /goalposts / corner posts or ^{improperly} housed/stored equipment or floodlight (poles) or fences 14. Reduce by regular maintenance or checking or by using protection on equipment or putting away/store unwanted equipment 15. Footwear 16. Reduce by wearing the correct /suitable footwear or by wearing footwear in good condition 17. Electrical equipment 18. Reduce by regular maintenance or checking or protective housing 19. Crowded area/too many people/other participants 20. Reduce by limiting the size of the crowd or through health and safety measures or by having strict rules of behaviour or through use of barriers or by having stewards (to control) 21. Weather or examples of poor weather or sunlight or lightning 22. Reduce by appropriate clothing or using sunscreen or go indoors 	[4]	<ul style="list-style-type: none"> • 2 marks max for description of hazards • 2 marks max for ways to reduce risk of each hazard described • If hazard incorrect then description of reducing hazard is incorrect • Accept alternative appropriate ways of reducing the risks posed by hazards • Do not accept: not wearing the correct equipment/clothing • Do not accept: objects, spectators (Vg) • Accept: surrounding hazard using cones for pt. 4,6,8,10. • Do not accept: stop the activity or call the game off

Section B – Short Answer Questions			
Question Number	Expected Answer	Marks	Guidance
18	<p>Six marks for six from:</p> <p>Three marks max for positive</p> <ol style="list-style-type: none"> Promotes/encourages sport/exercise/increases interest through sports coverage Promotes healthy living or healthy eating Motivates through role models/sports stars/successful/attractive people want to look like them or participate to make money Promotional campaigns/public service broadcasting or through advertising/adverts or advertise new facilities Wide variety on some channels/some minority sports or new/different sports/activities Have created funds/sponsorship that can be used to encourage health Gives information about healthy lifestyles/fitness eg the internet or new training methods or information about unhealthy lifestyles e.g. smoking/drugs <p>Three marks max for negative (only 1 mark max for opposites)</p> <ol style="list-style-type: none"> May encourage/reinforce/advertise unhealthy lifestyle/alcohol/drug consumption/gambling or show negative/unhealthy/bad behaviour of role models Too much contact with the media discourages activity/'couch potato' syndrome or gaming media discourages activity Minority sports under-represented / not many sports shown or represented / only a narrow representation of sports are shown or represented Women's sport/activity under-represented/misrepresented Disability sport under-represented/misrepresented Older performers under-represented 		<ul style="list-style-type: none"> 3 marks max for positives 3 marks max for negatives <p>If just opposite point then 1 mark max if no further explanation, e.g. <i>"media can promote sport or can put people off sport" = 1 mark (pt 1)</i></p> <p>If further explanation is provided then 2 marks could be awarded, e.g. <i>"Media can promote sport (pt 1) but could put people off sport because only a few sports are shown" (pt 10) = 2 marks</i> eg <i>Role models can inspire participation (pt1)</i> <i>Role models can show unhealthy behaviour (pt8)</i></p> <p><i>"show you what to eat or show what exercise to do" = Vg</i></p>

Section B – Short Answer Questions			
Question Number	Expected Answer	Marks	Guidance
	14. Makes people feel inadequate or not having the ability/skill or have not got the (right) body image or makes you feel less confident 15. Might show dangers of participation or (high) risk of injury or it is too aggressive	[6]	

Section B – Short Answer Questions			
Question Number	Expected Answer	Marks	Guidance
19	<p>Four marks for four from:</p> <ol style="list-style-type: none"> 1. Exam courses / qualifications eg GCSE PE encourages them to study and understand more about healthy lifestyle 2. Through PE lessons / National curriculum or educating about importance eg practical lessons on fitness that may encourage activity 3. Through extra-curricular activities/(school) teams / school matches or holiday play schemes eg sports days that would promote more activity 4. Provide new / different activities 5. Through links with (external clubs) eg links with local hockey or rugby clubs 6. School trips (to appropriate venues) eg school trip to the Olympic site 7. Encourage active playtimes eg equipment on playgrounds 8. Use role models or coaches or well qualified/expert teachers / significant performers eg the PE teacher is very fit and active and encourages participation 9. Making (new/different) facilities/equipment available 10. Promotional campaigns or through PSHE lessons or assemblies or posters/leaflets/school radio 11. Create roles/volunteers/leadership opportunities or coaching other pupils or officiating / umpiring / refereeing 12. Give rewards to those who participate in activities 	[4]	<p>Accept a list of short examples</p> <p>Do not accept: promote healthy lifestyles (vg)</p>

Section B – Short Answer Questions			
Question Number	Expected Answer	Marks	Guidance
20	<p>Four marks for four from:</p> <p>Sub max three marks for role of tendons</p> <ol style="list-style-type: none"> 1. Tendons attach muscles to bones 2. They can help to apply power to movement 3. Prevent over-extension (of joint) or gives stability/support 4. Stores energy <p>Sub max three marks for problems</p> <ol style="list-style-type: none"> 5. Tendons can get damaged / torn/strain/ripped/snap 6. They can suffer inflammation or tendonitis or tennis elbow 7. They can become tender or sore or painful/hurt 8. They can become swollen 9. Movement is reduced or difficult to move or less efficient/less effective 	[4]	<ul style="list-style-type: none"> • Do not accept 'stops participation' (in question) • Do not accept sprain • Do not accept 'helps movement' (vg) • Do not accept 'prevents movement'

Section B – Short Answer Questions														
Question Number	Expected Answer		Marks	Guidance										
21	<p>Five marks for five from:</p> <table border="1"> <tr> <td>What type of joint is the knee joint?</td> <td>Hinge joint or synovial joint</td> </tr> <tr> <td>When bending the knees, describe the movement around the joint</td> <td>Flexion (at the knee) / knee flexes</td> </tr> <tr> <td>Muscle group 1</td> <td>Quadriceps / quads or Hamstrings</td> </tr> <tr> <td>Muscle group 2</td> <td>Hamstrings or Quadriceps / quads</td> </tr> <tr> <td>Give a practical example of when you might use such a movement</td> <td>e.g. squatting (when weightlifting) or bending to pick the ball up at cricket etc.</td> </tr> </table>		What type of joint is the knee joint?	Hinge joint or synovial joint	When bending the knees, describe the movement around the joint	Flexion (at the knee) / knee flexes	Muscle group 1	Quadriceps / quads or Hamstrings	Muscle group 2	Hamstrings or Quadriceps / quads	Give a practical example of when you might use such a movement	e.g. squatting (when weightlifting) or bending to pick the ball up at cricket etc.	[5]	<p>Accept first answer only for each section Eg knee adducts and flexes = 0 marks Knee flexes and adducts = 1 mark</p> <p>Practical example must involve flexion at some point in the movement Eg kicking a ball in football</p> <p>Do not accept: same muscle group twice in group 1 and group 2</p> <p>Accept: 'jumping' for practical example (BOD)</p>
What type of joint is the knee joint?	Hinge joint or synovial joint													
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Muscle group 1	Quadriceps / quads or Hamstrings													
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Section B – Short Answer Questions			
Question Number	Expected Answer	Marks	Guidance
22	<p>Four marks for four from:</p> <ol style="list-style-type: none"> 1. Healthy Living programme - to encourage following healthy lifestyles 2. aimed to tackle barriers of limited parental awareness of weight status and associated health risks/parental beliefs that a healthy lifestyle is too challenging/pressures on parents which undermine healthy food choices/a perception that there are limited opportunities for active lifestyles 3. 5 (+)A Day message 4. Eating fruit and veg / different colours/rainbow foods provide a wide range of vitamins, minerals, fibre and healthy antioxidants, which can help to protect the body throughout life 5. (post) 2012 Olympics initiatives for health 6. Promotion of healthy diets and physical activity 7. Walking to school/use of bikes to get to school / Bikes around London / bikeability 8. Simple message easy to understand/has little scientific standing but is known by many so very motivating 9. Top Tips for Top Mums/advice to mothers or tips for mums 10. Encourages parents across the country to share tips and ideas with each other on how they get their children to eat more fruit and vegetables 11. Change4Life healthy lifestyles marketing initiative 12. Partnerships with commerce to appeal to young people/more motivating/attractive to young / any relevant change towards a more healthy lifestyle/Great Swapathon – change habits 13. Small Steps 4 Life or Eat Well Plate 14. Healthy lifestyles through small changes in diet / exercise / wellness 15. Five Choices to help you stay healthy 16. You should not smoke/Do some (regular) physical activity/Eat a healthy diet/Try to lose weight if you are overweight or obese/Don't drink too much alcohol 	[4]	<ul style="list-style-type: none"> • Accept for one mark the name of the initiative and a further mark for an attempt at an accurate description. • Accept a description of an initiative for 1 mark even if there is no initiative identified • Do not accept National Curriculum • Do not accept PE lessons as an initiative • Other relevant current government initiatives https://www.gov.uk/ • Or check Welsh initiatives http://gov.wales/topics/health/improvement/?lang=en • Eating 5 fruit and veg a day = 2 marks • Eating 5 a day = 1 mark

Section B – Short Answer Questions			
Question Number	Expected Answer	Marks	Guidance
22	<p>17. 30 minutes of (moderate aerobic) physical activity, on most days</p> <p>18. Minimum of two sessions of muscle-strengthening activities per week (not on consecutive days)</p> <p>19. Children and teenagers should get at least one hour a day of moderate physical activity / 5X60 initiative (Wales)</p> <p>20. Can be achieved by a mixture of play/PE/games/dance/cycling/a brisk walk to school/sports/various outdoor activities or equivalent</p> <p>21. School based initiatives.</p> <p>22. Description of school-based initiatives eg walking to school or canteen provision or healthy lunches</p> <p>23. Free swimming or sports concessions</p> <p>24. Access to swimming for young and older people</p> <p>25. This girl can</p> <p>26. To increase participation of females in activities</p> <p>27. Drinkaware</p> <p>28. Limiting alcohol consumption or risks involved with alcohol</p>		
23	<p>Four marks for four from:</p> <p>1. When working/during/after hard/high intensity activity</p> <p>2. When there is a lack of oxygen/anaerobic</p> <p>3. (Builds up) in muscle</p> <p>4. Causes fatigue/tiredness</p> <p>5. Causes pain/discomfort/aching/soreness</p> <p>6. Makes you stop the activity or impeding activity/weakness/hard to move or decrease performance</p>	[4]	<p>Do not accept: tightens/stiffness in muscles / gives you the stitch/cramp</p> <p>Do not accept: affects the ability to maintain activity (in the question)</p>

Section B – Short Answer Questions			
Question Number	Expected Answer	Marks	Guidance
24	<p>Five marks for five from:</p> <p>Sub max two marks for vascular shunt:</p> <ol style="list-style-type: none"> 1. More blood goes to (working) muscles 2. Less blood goes to other organs (that don't need as much oxygen) <p>Sub max three marks for other short term effects</p> <ol style="list-style-type: none"> 3. Increase in respiratory/breathing rate or breathless or heavy breathing 4. Increase in oxygen uptake 5. Increase in tidal volume or the amount of air expired / inspired in a single breath 6. Increase in minute volume amount of air per minute 7. Increase in heart rate 8. Increase in cardiac output or more blood pumped per minute 9. Increase in blood pressure 10. Increase in stroke volume or more blood is pumped out by the heart or more blood per heart beat or increase in blood flow 11. Increase in muscle fatigue or you get tired or aching/soreness or cramp 12. Increase in (muscle/body) temperature 	[5]	<ul style="list-style-type: none"> • Do not accept vascular shunt is a short term effect of exercise (repeat of the question) • For other short term effects of exercise mark the first three effects identified only • Do not accept: 'direct blood to where it is needed' (Vg) • Do not accept: dizziness/light headedness.

Section B – Short Answer Questions			
Question Number	Expected Answer	Marks	Guidance
25*	<p>Six marks total.</p> <p>Levels marked question</p> <p><u>Level 1 (1-2 marks)</u> Candidates describes only very superficially. Little or attempt at explanation. There is little or no use of technical vocabulary and sentences have limited coherence and structure. There is much irrelevant material with factors unconnected motivation. Errors in grammar, punctuation and spelling may be noticeable and intrusive.</p> <p><u>Level 2 (3-4 marks)</u> Candidates make some attempt at explanation with good knowledge and understanding. Material largely relevant to motivation. 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><u>Level 3 (5-6 marks)</u> Candidates make many explained and developed points. Candidate demonstrates excellent knowledge and understanding of the factors involved. Candidate gives relevant material directly related to motivation that is clearly structured and using appropriate terminology and technical vocabulary. There are few if any errors in grammar, punctuation and spelling.</p>	[6]	<p>Differentiating between levels look for:</p> <p>Level 1:</p> <ul style="list-style-type: none"> - Description or list rather than explanation - Limited motivational methods – mostly extrinsic - Some incorrect material - Very few or no practical examples - It is unlikely for more than two marks to be scored if no practical examples are given <p>Level 2:</p> <ul style="list-style-type: none"> - Some explanation rather than merely description - variety of methods but few points developed - Some relevant practical examples - It is unlikely for more than three marks to be given for one practical example <p>Level 3:</p> <ul style="list-style-type: none"> - Points are developed / expanded well - Clear explanations of a variety of methods - Practical examples are relevant <p>Examiners: Always indicate the level at the end of the response</p>

Section B – Short Answer Questions			
Question Number	Expected Answer	Marks	Guidance
	<p>Indicative content –</p> <ol style="list-style-type: none"> 1. Use of extrinsic methods <ul style="list-style-type: none"> • Give rewards/badges/accolades • Positive reinforcement / feedback 2. Use competition to motivate <ul style="list-style-type: none"> • Matches / games / variety / different competitions 3. Use of intrinsic methods <ul style="list-style-type: none"> • Make it fun/ enjoyable / increase confidence / self belief • varied/interesting/exciting 4. Set goals <ul style="list-style-type: none"> • (SMART) a plan of action • More explanation of SMART principle 5. Encourage / persuade / educate /try new sports or new/different facilities/equipment <ul style="list-style-type: none"> • enthuse / inspire / enjoyment • Building skate park close by or providing appropriate equipment 6. Show the positive effects <ul style="list-style-type: none"> • Body image or feeling better etc • Relieves stress / anxiety 7. Give success/feeling of success <ul style="list-style-type: none"> • Sense of achievement 8. Show role models/lead by example or parents participating <ul style="list-style-type: none"> • Identify role models that might motivate 9. Show or educate about the detrimental effects of a poor lifestyle / poor health <ul style="list-style-type: none"> • Using facts and figures or research 10. Measure fitness/health to show need to change <ul style="list-style-type: none"> • Various fitness or health tests 11. Punish unhealthy/inactive behaviour <ul style="list-style-type: none"> • Parents might not let children use computer games 12. More information about health meals <ul style="list-style-type: none"> • eating well or use of government initiatives 		<p>Bullet points indicate possible development points but could be stand-alone knowledge points</p> <p>Give credit to practical examples if they exemplify indicative content points</p> <p>Use EG annotation when examples given</p>

Section B – Short Answer Questions			
Question Number	Expected Answer	Marks	Guidance
	<p>13. Get them to join a club</p> <ul style="list-style-type: none"> • get with others who may exercise / follow a healthy lifestyle <p>Possible examples:</p> <p>14. Badges – description of what type or Eg getting a swimming badge for successfully swimming a particular distance</p> <p>15. Medals / cups – description or Eg gaining a medal / cup for winning a cycle race</p> <p>16. Certificates – description or Eg for following a healthy lifestyle programme at school</p> <p>17. Money / financial reward – description or Eg if you give up smoking your parents will give you £100</p> <p>18. Praise – description or Eg Your teacher praises you for taking up exercise</p> <p>19. Being accepted into a group / making friends or Eg you now have friends you gained whilst attending the gym club</p> <p>20. Promotional campaigns</p> <ul style="list-style-type: none"> • Council provide taster sessions/activities 		Accept other relevant examples
	Total [45]		
	Paper Total [60]		

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

Education and Learning

Telephone: 01223 553998
Facsimile: 01223 552627
Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

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Head office
Telephone: 01223 552552
Facsimile: 01223 552553

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