



GCSE

Physical Education

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

General Certificate of Secondary Education

Mark Scheme for June 2014

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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.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

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Annotations used in the detailed Mark Scheme

| | | |
|------|-------|--|
| BP | | Blank Page – this annotation must be used on all blank pages within an answer booklet (structured or unstructured) and on each page of an additional object where there is no candidate response. |
| ? | ? | Unclear |
| BOD | BOD | Benefit of doubt |
| X | Cross | Incorrect |
| L1 | L1 | Level 1 |
| L2 | L2 | Level 2 |
| L3 | L3 | Level 3 |
| REP | REP | Repeat |
| ✓ | Tick | Correct |
| VG | VG | Vague |
| SEEN | SEEN | Noted but no credit given |
| S | S | S (indicates ‘sub max reached’) |
| EG | EG | Example |
| K | K | Knowledge |
| DEV | DEV | Development |

- 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 | Answer | Marks | Guidance |
| 1 | b. Wearing a mouth guard in hockey | [1] | |
| 2 | a. An increase in muscle temperature | [1] | |
| 3 | d. Only allows flexion and extension | [1] | |
| 4 | d. Wanting to win the basketball tournament to get a trophy | [1] | |
| 5 | c. To ensure enough oxygen reaches the working muscles | [1] | |
| 6 | c. They can become inflamed following too much exercise | [1] | |

| Section A – Multiple choice | | | |
|------------------------------------|---|--------------|-----------------|
| Question | Answer | Marks | Guidance |
| 7 | d. Frequency, Intensity, Time and Type | [1] | |
| 8 | a. Selects the host city for the Olympic Games | [1] | |
| 9 | c. Too much chlorine in the water | [1] | |
| 10 | b. A coach who used to be an excellent player demonstrating a skill | [1] | |
| 11 | b. Setting a target to score 15 goals in half a season in hockey | [1] | |

| Section A – Multiple choice | | | |
|------------------------------------|--|--------------|-----------------|
| Question | Answer | Marks | Guidance |
| 12 | d. Knowledge of results is knowing your score and knowledge of performance is knowing how good your technique is | [1] | |
| 13 | c. Pectorals and triceps | [1] | |
| 14 | a. A series of bounding, hopping and jumping movements | [1] | |
| 15 | b. To build new facilities to provide activities for people | [1] | |
| | Total | [15] | |

| Section B – Short Answer Questions | | | |
|------------------------------------|---|-------|---|
| Question | Answer | Marks | Guidance |
| 16 | <p>Three marks for three from:</p> <ol style="list-style-type: none"> 1. Increase in size / mass(of muscle fibres)/hypertrophy/ increase in growth (of muscles) 2. Increase in strength (of muscle fibres) / tone / power/force or increase in strength of ligaments/tendons 3. Increase in speed (of contraction) 4. Increase in muscular endurance/last longer/ less time to fatigue 5. Increase in flexibility/stretch further(of muscle)/elasticity 6. Increased tolerance to lactic acid 7. Increase in recovery rate / recovers quicker 8. Increased rate of removal of lactic acid /reduce the build-up of lactic acid or produce less lactic acid 9. Greater potential for energy production/more energy available 10. Size/number of mitochondria increased 11. Increase in myoglobin (within muscle cells) 12. Increase in capillaries in muscles /more oxygen/ haemoglobin to (working) muscles 13. Helps prevent injury/helps recovery from injury 14. Causes injury / strains / damage/ can decrease mobility | [3] | <ul style="list-style-type: none"> • Must be a description for each mark awarded. • Do not allow single word answers as descriptions • But – accept hypertrophy on its own • Efficient / work harder= too vague • Do not accept stamina |

| Section B – Short Answer Questions | | | |
|------------------------------------|--|-------|--|
| Question | Answer | Marks | Guidance |
| 17 | <p>Four marks for four from:</p> <p>2 marks max for description:</p> <ol style="list-style-type: none"> 1. Known as speed play/ variation of speed / moving at different speeds 2. [Variety of activities] a mixture of different types of activities or cross country running with sprint activities or e.g. cross country running and sprinting 100m or different terrains 3. [Short and long] Includes short and long distance work / running / walking or different intensities or aerobic and anaerobic work <p>2 marks max for benefits:</p> <ol style="list-style-type: none"> 4. Improves aerobic capacity or (cardiovascular)endurance / stamina or increase in oxygen to muscles 5. (as well as) Improves anaerobic capacity 6. More tolerant/resistant/effective removal of lactic acid 7. Improves muscular endurance / go for longer / do more without tiring 8. Improves speed 9. Improves power/strength | [4] | <p>Pt2 look for variety of different activities.</p> <p>Pt3 look for different distances / intensities Interval training is too vague</p> <p>Pt4 accept answers linked to the utilisation of oxygen or CV endurance</p> <p>Do not accept 'makes you fitter'</p> <p>Do not accept identifications unrelated to fitness eg enjoyment/ mimicking the game</p> <p>Improves cardiovascular system/fitness = too vague</p> <p>Improves aerobic fitness = too vague</p> |

| Question | Answer | Marks | Guidance |
|----------|---|-------|--|
| 18 | <p>Six marks for six from:</p> <ol style="list-style-type: none"> 1. Decrease in participation / lack of participation 2. Decrease in facilities or run down poor quality facilities or the shutting down of facilities or decrease in new facilities being built 3. Decrease in number of competitions / clubs / leagues/ initiatives 4. If family have low funds then tendency to eat unhealthily or do not have the money to buy healthy food (that might affect energy levels for participation). 5. Lack of sponsorship may make it difficult for (a talented) athlete to train or compete 6. Membership fees to clubs unaffordable so cannot participate or match fees or competition fees 7. 8. Equipment / kit cannot be bought 9. Entrance fees hiring facilities too expensive and therefore cannot get a venue or place to train or play 10. Can demotivate so lack of participation /not worth the bother 11. Unable to pay for transport to gain access 12. Coaching or teaching fees/ grading fees may be a barrier or fees for officials 13. More likely to participate in activities that require little/no funds or reduced types of activities available 14. Cannot afford rehab or physiotherapy following injury 15. (positive view) May encourage community to work together (on community projects) or encourages people to volunteer or to work for charity provision | [6] | <p>Pt1 is a general mark for recognition of decrease in participation.</p> <p>For further marks look for more explanations of effects.</p> <p>Do not credit points about increased or sufficient funding – look for explanation of the effects of reduced funding</p> |

| Question | Answer | Marks | Guidance |
|----------|--|-------|---|
| 19 | <p>Four marks for four from:</p> <ol style="list-style-type: none"> (Agonist) – The muscle that produces the movement /contracts/shortens or prime mover or the working muscle E.g. biceps in biceps curl (Antagonist) – Works to counter /opposes the action / relaxes/ lengthens (of the agonist) or it controls the movement/the agonist E.g. the triceps in the biceps curl (Synergist) – This helps the agonist/prime mover to produce the movement or they are neutralisers or stabilise or supports the joint/body/movement E.g. the stabilising muscle (brachialis) in the biceps curl (Antagonistic pairs) – when the agonist and antagonist work together or when one muscle contracts the other relaxes or when one muscle lengthens the other shortens E.g. biceps and triceps in the biceps curl | [4] | <ul style="list-style-type: none"> Must use a practical example for each for a mark to be scored. No practical example then no marks Pt3. No requirement to name the muscle for the synergist Do not accept work in pairs for Pt4 (in the question) |

| Question | Answer | Marks | Guidance |
|----------|--|-------|---|
| 20 | <p>Five marks for five from:</p> <p>Sub max two marks for description of features:</p> <ol style="list-style-type: none"> 1. Series/variety of /multiple exercises or exercises/activities arranged in a particular order or stations of exercises 2. Main muscle groups should be separated at each station/exercise 3. Involve exercise such as press-ups etc. or with apparatus or with skills or examples of exercises 4. Repetition /reps of exercises 5. Uses (mostly) the body as resistance 6. Each station is timed 7. There is a rest period between each station <p>Sub max three marks for application of fitness principles:</p> <p>8. (Use of Overload):</p> <ul style="list-style-type: none"> • Work/get harder than normal/puts body under stress/adaptation will follow/comes about by increasing frequency/intensity/duration. • E.g. Doing <u>more</u> reps at each station <p>9. (Use of Specificity):</p> <ul style="list-style-type: none"> • Training should be particular/relevant to needs/relevant energy system used/relevant muscle groups used or relevant to type of activity/sport/skill. • E.g. choosing main arm muscle groups used in activity to train for arm strength. <p>10. (Use of Progression):</p> <ul style="list-style-type: none"> • (Gradually) becomes more difficult/harder/demanding/challenging/once adapted then more demands on body • E.g. Trying to complete the circuit in a shorter time or spending more time at each station | [5] | <ul style="list-style-type: none"> • Do not accept circuit for pt 1 (in the question) • Two marks max for features – then mark with an S if two marks for features scored • Do not accept specific for pt 9 (in the question) • Example can be used for each principle. • Pt 8 overwork/working to your max = too vague |

| Question | Answer | Marks | Guidance |
|----------|--|-------|---|
| 21 | <p>Four marks for four from:</p> <ol style="list-style-type: none"> 1. Local authority – provides local facilities etc. 2. Schools – encourage through curriculum/ after school clubs etc. 3. Private enterprise / commercial companies / Sky initiatives - living for sport / premier League initiatives – provide individual coaching / Nike – sports camps / providing kit 4. Voluntary organisations/charities/sports clubs – give local opportunities to play in a team etc. 5. NGB's – provides grass route opportunities 6. Sport England/Scotland/Wales/Northern Ireland– provides funding for opportunities 7. UK Sport – provide funding for some activities or support/opportunities for individuals etc. 8. Youth Sport Trust- provides funding for participation 9. Worldwide or International organisations eg FIFA – attempting to promote women's football or NBA encourages young players 10. National Lottery – provide funds for promoting participation | [4] | <ul style="list-style-type: none"> • Do not accept BOA or IOC (in the question) • One mark for correctly identifying the organisation • One mark for linking the organisation to promoting participation • Accept any relevant points about any appropriate organisations they have identified • Only accept one NGB organisation for two marks max • Do not accept Sky TV or watching sport |
| 22 | <p>Three marks for three from:</p> <p>Two marks max for structure:</p> <ol style="list-style-type: none"> 1. (Soft) <u>connective tissue</u> 2. Tough or elastic material 3. Has no blood supply 4. Does not heal very easily when torn 5. Receives nutrition from surrounding capillaries 6. There are different types of cartilage or there is yellow elastic/hyaline or white fibro cartilage <p>Two marks max for use of cartilage:</p> <ol style="list-style-type: none"> 7. (white fibro) cartilage can act as a shock absorber/ cushion 8. Prevents friction / prevents bones rubbing together or wear and tear 9. (Hyaline cartilage) can protect the (articulating) surfaces of bones 10. Helps to connect some bones | [3] | <ul style="list-style-type: none"> • Two marks max for structure pts 1-6 • Two marks max for function pts 7-11 • Must visit both structure and function for max of three marks • To protect joint = too vague |

| Question | Answer | Marks | Guidance |
|----------|--|-------|---|
| | 11. Aids mobility of joint or move more freely | | |
| 23 | <p>Six marks for six from:</p> <p>(SMART)</p> <p>One mark for all five components identified.</p> <ul style="list-style-type: none"> - Specific and measurable and achievable/agreed and recorded/realistic and time-phased. <p>Five marks max for:</p> <ol style="list-style-type: none"> 1. S = Specific - need to make the goal a particular target / to your sport / you know what you are trying to achieve e.g. beat your personal best time or to improve your chest pass in basketball 2. M = Measurable - need to be able to measure the goal e.g. to know how well you have done/to assess progress on a gymnastic apparatus 3. A = Achievable - must be within the capabilities of the individual/or A = Agreed - e.g. you can agree your targets with your coach or peer for athletics throwing event or agreed with coach/parent 4. R = Recorded - goals should be written down when agreed with your netball coach or R = Realistic - must be within the capabilities of the individual/or attainable e.g. scoring at least one goal every two games for a striker in football 5. T = Time-phase/timed / time – e.g. goal of improving serving technique in tennis should be achieved in six weeks' time. | [6] | <ul style="list-style-type: none"> • Identify <u>all</u> five = 1 mark • Must have practical examples for a further five marks to be scored • Identify any suitable example that can be relevant to improving performance • Accept weight loss as a target to improve performance • Pt 2 To measure how far you jump = too vague |

| Question | Answer | Marks | Guidance |
|----------|--|-------|--|
| 24 | <p>Four marks for four from:</p> <p>Sub max of one mark for example of extrinsic feedback:</p> <ol style="list-style-type: none"> 1. Coach praises an attempt at serving in tennis or crowd applauds a good tennis shot or Eq. <p>Sub max 3 marks for linking <u>different types of extrinsic feedback</u> to motivation:</p> <ol style="list-style-type: none"> 2. Can give you knowledge of results or how well/badly you have done / achieved something / winning a match 3. Can encourage you with positive comments or can be positive feedback or can be a reward/prize (that motivates you) 4. Can be criticism or negative feedback that might make you more determined. 5. Can be knowledge of performance or could inform you about how good your technique or tactics are 6. Can give you strategies for improvement or new ideas to work on or creative strategies or can set goals. | [4] | <ul style="list-style-type: none"> • Accept any relevant example of feedback from an external source for pt 1. • Accept up to three marks for explaining the use of <u>different types of extrinsic feedback</u> to motivate. |

| Question | Answer | Marks | Guidance | Levels of Response |
|----------|--|-------|--|---|
| | | | Content | |
| 25* | <p>Six marks total.</p> <p>Indicative content</p> <p>Possible situations that could be referred to are:</p> <ul style="list-style-type: none"> • Outdoor swimming pool • Playing field • Artificial outdoor area • Court areas • Outdoor adventurous areas <p>Practical examples of reducing risks might include:</p> <ol style="list-style-type: none"> 1. Activity supervised <ul style="list-style-type: none"> • qualified instructor / go with someone else • codes of behaviour 2. Correct clothing <ul style="list-style-type: none"> • footwear/shoes/properly fastened clothing / fits well 3. Personal protective equipment/ the right equipment <ul style="list-style-type: none"> • Gum shield / helmet etc. 4. Risk assessment <ul style="list-style-type: none"> • Follow health and safety procedures • Follow rules/no jewellery • Remove litter/leaves/faeces 5. Check equipment for faults <ul style="list-style-type: none"> • Regular maintenance 6. Take the climate/weather /environment / surfaces into account <ul style="list-style-type: none"> • (when planning/continuing)/ keep track of where you are • appropriate pitch or surface 7. Activities suitable for the age/ability/experience of the participants | [6] | <p>Differentiating between levels look for:</p> <p>Level 1 (1-2 marks):</p> <ul style="list-style-type: none"> - Description rather than explanation - Very narrow range of strategies with little or no development - Only one situation or environment referred to, if at all with superficial or incorrect examples <p>Level 2 (3-4 marks):</p> <ul style="list-style-type: none"> - Some explanation - Some different strategies with some development points - At least two different situations or environs included for mostly good practical examples <p>Level 3 (5-6 marks):</p> <ul style="list-style-type: none"> - Points are developed / expanded - Clear explanations - Different situations or environs included (prob 3+)for excellent practical examples | <p>Levels marked question</p> <p>Level 1 (1-2 marks) 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. Errors in grammar, punctuation and spelling may be noticeable and intrusive.</p> <p>Level 2 (3-4 marks) Candidates make some attempt at explanation with good knowledge and understanding. Material largely relevant.. 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 explained and developed points. Candidate demonstrates excellent knowledge and understanding of the factors involved.</p> |

| Question | Answer | Marks | Guidance | Levels of Response |
|----------|--|-------------|---|--|
| | | | Content | |
| | 8. Lift and carry equipment correctly 9. Exercise/compete at appropriate level or fitness • don't overdo it 10. Warm up/cool down • stretching exercises 11. Use correct technique/skills 12. Take telephone • tell someone where you are going 13. Cover any cuts / abrasions with a plaster • Carry first aid equipment or have a first aider or qualified person on hand | | Examiners: Always indicate the level at the end of the response Bullet points indicate possible development points but could be stand-alone knowledge points Give credit to practical examples if they exemplify indicative content points Use EG annotation when examples given | 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 |
| | Total | [45] | | |
| | Paper Total | [60] | | |

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