

GCE

Physical Education

Unit **G451**: An Introduction to Physical Education

Advanced Subsidiary GCE

Mark Scheme for June 2015

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of candidates of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, Cambridge Nationals, Cambridge Technicals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

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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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These are the annotations, (including abbreviations), including those used in scoris, which are used when marking

Annotation	Meaning
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.
✓	Correct response
x	Incorrect response
BOD	Benefit of the doubt
REP	Repeat of key point in question or point already awarded
?	Unclear
L1	Level 1
L2	Level 2
L3	Level 3
KU	Knowledge and Understanding
EG	Example/Reference
TV	Too Vague
DEV	Development
SEEN	Noted but no credit given
IRRL	Significant amount of material which does not answer the question

Subject-specific Marking Instructions

Marking responses ‘a – d’; points marked questions

An element of professional judgement is required in the marking of G451. Correct answers should always be rewarded irrespective of whether or not they appear on the mark scheme. If you are in doubt about the validity of any answer then consult your Team Leader (Supervisor) by phone, scoris messaging or e-mail.

Marking response ‘e’; levels of response marked question

It is quite possible for an excellent and valid answer to contain knowledge and arguments which do not appear in the indicative content on the mark scheme. Each answer must be assessed on its own merits according to the generic descriptors and discriminators.

The levels of response descriptors are cumulative, ie a description at one level builds on or improves the descriptions at lower levels. Not all qualities listed in a level must be demonstrated in an answer for it to fall in that level.

Candidates will take different approaches to achieve within the same level. Some will adopt a less focused approach but demonstrate a wide range of knowledge others may adopt a more focused approach using a narrower range of well-developed knowledge.

Approach to marking levels of response questions:

- read the candidate response in full;
- working from the top down and using a *best-fit* approach, refer to the generic descriptors and discriminators to determine the level;
- re-read the answer, highlighting credit worthy aspects of the response in relation to knowledge, understanding, development, examples, etc;
- confirm or revise initial decision re level;
- determine the mark within the level as per the guidance in 10 (above), with reference to the discriminators, and, again, using a *best-fit* approach.

Section A - Anatomy and Physiology

Question			Answer	Marks	Guidance																									
1	(a)	(i)	3 marks for 3 from: 1. Abduction 2. Adductor brevis or adductor magnus or adductor longus 3. Concentric	3	<table border="1"> <thead> <tr> <th>Accept</th> <th>Do not accept</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td></td> </tr> <tr> <td>2. adductor group adductors on own</td> <td>brevis or magnus or longus on own</td> </tr> <tr> <td>3. isotonic concentric</td> <td>isotonic on own</td> </tr> </tbody> </table>		Accept	Do not accept	1.		2. adductor group adductors on own	brevis or magnus or longus on own	3. isotonic concentric	isotonic on own																
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		(ii)	2 marks for 2 from: Mark first two only 1. increased temperature 2. decreased viscosity or viscous resistance 3. increased elasticity or flexibility 4. decreased risk of injury 5. increased efficiency of muscular contractions / greater economy of movement / improved coordination between antagonistic pairs 6. increased speed of nerve transmission or impulses 7. increased speed of relaxation 8. increased force or speed of muscular contraction / increased contractility 9. increased motor unit recruitment / improved motor unit coordination 10. increased enzyme activity	2	<table border="1"> <thead> <tr> <th>Accept</th> <th>Do not accept</th> </tr> </thead> <tbody> <tr> <td colspan="2">increased speed of musc cont'n ... increased force of musc cont'n – count as 1 attempt ONLY (pt 8).</td> </tr> <tr> <td>1.</td> <td>warms up muscle</td> </tr> <tr> <td>2.</td> <td>decreased viscosity of blood</td> </tr> <tr> <td>3. increased range of movement</td> <td>more stretchy or pliable or looser muscles</td> </tr> <tr> <td>4.</td> <td></td> </tr> <tr> <td>5.</td> <td></td> </tr> <tr> <td>6.</td> <td></td> </tr> <tr> <td>7.</td> <td></td> </tr> <tr> <td>8. faster / more powerful muscular contraction</td> <td>stronger muscles/ muscles can work at higher intensity = TV</td> </tr> <tr> <td>9.</td> <td></td> </tr> <tr> <td>10.</td> <td></td> </tr> </tbody> </table>		Accept	Do not accept	increased speed of musc cont'n ... increased force of musc cont'n – count as 1 attempt ONLY (pt 8).		1.	warms up muscle	2.	decreased viscosity of blood	3. increased range of movement	more stretchy or pliable or looser muscles	4.		5.		6.		7.		8. faster / more powerful muscular contraction	stronger muscles/ muscles can work at higher intensity = TV	9.		10.	
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1	(b)	(i)	<p>1 mark for 1 from:</p> <ol style="list-style-type: none"> the force or pressure exerted by blood against the walls or endothelium of a blood vessel / blood flow x resistance / cardiac output or Q x resistance 	1	<table border="1"> <thead> <tr> <th>Accept</th> <th>Do not accept</th> </tr> </thead> <tbody> <tr> <td>1. any named blood vessel / flow x resistance / endothelium for walls</td> <td></td> </tr> </tbody> </table>		Accept	Do not accept	1. any named blood vessel / flow x resistance / endothelium for walls																	
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	(b)	(ii)	<p>4 marks for 4 from: Sub max 3 from either section</p> <p><u>Systolic Blood Pressure</u></p> <ol style="list-style-type: none"> increases (as exercise intensity increases) increases from 120mmHg (at rest) up to 240 mmHg (at maximal levels) plateaus at submaximal levels can decrease (slightly) during prolonged exercise large increase in activities involving isometric muscular contractions <p><u>Diastolic Blood Pressure</u></p> <ol style="list-style-type: none"> little or no change (during submaximal exercise) decreases during gross muscle activities (eg rowing) decreases in trained performers increases during maximal intensity exercise or in activities involving isometric muscular contractions 	4	<p>Candidates must identify which component of blood pressure they are describing before marks can be awarded.</p> <table border="1"> <thead> <tr> <th>Accept</th> <th>Do not accept</th> </tr> </thead> <tbody> <tr> <td>1. both increase = BOD for systolic</td> <td>blood pressure increases</td> </tr> <tr> <td>2. Any value in this range</td> <td>resting value or exercise value on own.</td> </tr> <tr> <td>3.</td> <td></td> </tr> <tr> <td>4.</td> <td></td> </tr> <tr> <td>5.</td> <td></td> </tr> <tr> <td>6.</td> <td>blood pressure stays the same</td> </tr> <tr> <td>7.any suitable examples of a gross motor activity</td> <td>blood pressure decreases</td> </tr> <tr> <td>8.</td> <td></td> </tr> <tr> <td>9.</td> <td></td> </tr> </tbody> </table>		Accept	Do not accept	1. both increase = BOD for systolic	blood pressure increases	2. Any value in this range	resting value or exercise value on own.	3.		4.		5.		6.	blood pressure stays the same	7.any suitable examples of a gross motor activity	blood pressure decreases	8.		9.	
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1	(c)	<p>4 marks for 4 from:</p> <ol style="list-style-type: none"> 1. controlled by the autonomic nervous system or ANS 2. sympathetic nervous system or sympathetic nerves stimulated 3. adrenalin or nor-adrenalin (secreted from adrenal glands) - 4. stimulates or increases the firing rate of the SA node / increases heart rate or HR 5. increases force of contraction / increases stroke volume or SV 6. increases cardiac output or Q 	4	<table border="1"> <thead> <tr> <th>Accept</th> <th>Do not accept</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td></td> </tr> <tr> <td>2.</td> <td></td> </tr> <tr> <td>3. epinephrine or norepinephrine</td> <td></td> </tr> <tr> <td>4.</td> <td rowspan="3">pts 4,5,6 without pt 3. i.e. increase in HR, SV and Q must be linked to hormonal control i.e. release of adrenalin.</td> </tr> <tr> <td>5.</td> </tr> <tr> <td>6.</td> </tr> </tbody> </table>	Accept	Do not accept	1.		2.		3. epinephrine or norepinephrine		4.	pts 4,5,6 without pt 3. i.e. increase in HR, SV and Q must be linked to hormonal control i.e. release of adrenalin.	5.	6.	
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1	(d)	<p>6 marks for 6 from:</p> <p>1. Gas or oxygen or carbon dioxide moves from a high (partial) pressure or pp or concentration to low (partial) pressure or pp or concentration</p> <p>Oxygen Submax of 4 marks</p> <p>2. there is a high partial pressure or concentration of oxygen or ppO_2 in the blood or capillary</p> <p>3. there is a low partial pressure or concentration of oxygen or ppO_2 in the muscle</p> <p>4. there is a concentration or diffusion gradient (of oxygen between the blood or capillary and the muscle)</p> <p>5. oxygen diffuses or moves from the blood or capillary into the muscle</p> <p>Carbon Dioxide Submax of 4 marks</p> <p>6. there is a high partial pressure or concentration of carbon dioxide or $ppCO_2$ in the muscle</p> <p>7. there is a low partial pressure or concentration of carbon dioxide $ppCO_2$ in the blood or capillary</p> <p>8. there is a concentration or diffusion gradient (of carbon dioxide between the blood or capillary and the muscle)</p> <p>9. carbon dioxide diffuses or moves from the muscle into the blood or capillary</p>	6	<table border="1"> <thead> <tr> <th>Accept</th> <th>Do not accept</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td></td> </tr> <tr> <td>2. Accept pts 2 and 3 for: 3. "there is a higher ppO_2 in the blood than the muscle" or vice versa.</td> <td>pressure on own high amount or level of O_2 pressure on own low amount or level of O_2</td> </tr> <tr> <td>4. pressure gradient</td> <td>gradient on own</td> </tr> <tr> <td>5.</td> <td></td> </tr> <tr> <td>6. Accept pts 6 and 7 for: 7. "there is a higher $ppCO_2$ in the muscle than the blood" or vice versa.</td> <td>pressure on own high amount or level of CO_2 pressure on own low amount or level of O_2</td> </tr> <tr> <td>8. pressure gradient</td> <td>gradient on own</td> </tr> <tr> <td>9.</td> <td></td> </tr> </tbody> </table>	Accept	Do not accept	1.		2. Accept pts 2 and 3 for: 3. "there is a higher ppO_2 in the blood than the muscle" or vice versa.	pressure on own high amount or level of O_2 pressure on own low amount or level of O_2	4. pressure gradient	gradient on own	5.		6. Accept pts 6 and 7 for: 7. "there is a higher $ppCO_2$ in the muscle than the blood" or vice versa.	pressure on own high amount or level of CO_2 pressure on own low amount or level of O_2	8. pressure gradient	gradient on own	9.	
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(e)* Levels of Response	
<p>Level 3 (8 – 10 marks) A comprehensive answer:</p> <ul style="list-style-type: none"> • detailed knowledge & understanding • effective analysis/critical evaluation and/or discussion/explanation/development • clear and consistent practical application of knowledge • accurate use of technical and specialist vocabulary • high standard of written communication 	<p>At level 3 responses <u>are likely</u> to include:</p> <ul style="list-style-type: none"> • Detailed explanation of VCC, VSM and VR • Balance of knowledge between VSM and VR <ul style="list-style-type: none"> ○ explanation of Starling's Law • Knowledge of the changes in Q and distribution of Q from rest to max exercise.
<p>Level 2 (5 - 7 marks) A competent answer:</p> <ul style="list-style-type: none"> • satisfactory knowledge & understanding • analysis/critical evaluation and/or discussion/explanation/development attempted with some success • some success in practical application of knowledge • technical and specialist vocabulary used with some accuracy • written communication generally fluent with few errors 	<p>At level 2 responses <u>are likely</u> to include:</p> <ul style="list-style-type: none"> • Satisfactory explanation of VCC, VSM and or VR although one may be covered in more detail than the other. • Reference to the changes in Q and distribution of Q from rest to max exercise.
<p>Level 1 (1 - 4 marks) A limited answer:</p> <ul style="list-style-type: none"> • basic knowledge & understanding • little or no attempt to analyse/critically evaluate and/or discuss/explain/develop • little or no attempt at practical application of knowledge; • technical and specialist vocabulary used with limited success • written communication lacks fluency and there will be errors, some of which may be intrusive 	<p>At level 1 responses <u>are likely</u> to include:</p> <ul style="list-style-type: none"> • Basic explanation of VCC, VSM and/or VR • No or basic knowledge of the changes in distribution of Q from rest to max exercise.
<p>[0 marks] No response or no response worthy of credit.</p>	

Question	Answer	Marks	Guidance
(e)*	<p>Indicative content: Candidate responses are likely to include: (relevant responses not listed should be acknowledged)</p> <p>Numbered points = knowledge / understanding</p> <p>Bullet points = likely to be development of knowledge</p> <p><u>Changes in cardiac output and distribution of cardiac output</u></p> <p>At rest ...</p> <ol style="list-style-type: none"> 1. Cardiac output or Q is 5l/min <ul style="list-style-type: none"> • for an average adult and trained performer 2. Distribution of blood or Q to muscles is low <ul style="list-style-type: none"> • 15-20% (of Q) • approx. 1l or 1l/min 3. Distribution of blood or Q to organs is high <ul style="list-style-type: none"> • 80-85% (of Q) • approx. 4l or 4l/min <p>As exercise intensity increases up to maximal ...</p> <ol style="list-style-type: none"> 4. Cardiac output or Q increases <ul style="list-style-type: none"> • (submax) 15-25l or l/min for trained performer • (submax) 10-15l or l/min for average adult • (max) 20-40l or l/min for trained performer • (max) 20-30l or l/min for average adult 5. Distribution of blood or Q to muscles increases <ul style="list-style-type: none"> • 80-85% (of Q) • approx. 16-32l or l/min 6. Distribution of blood or Q to organs decreases <ul style="list-style-type: none"> • 15-20% of Q • approx. 4-8l or l/min 7. Distribution of blood to the brain remains constant <ul style="list-style-type: none"> • approx 700-750ml 8. Distribution of blood to heart increases <ul style="list-style-type: none"> • from 250ml at rest to 750ml 	10	<p>Be aware of candidates who link:</p> <ul style="list-style-type: none"> - pt 5 to pts 14-16 - pt 6 to pts 17-19

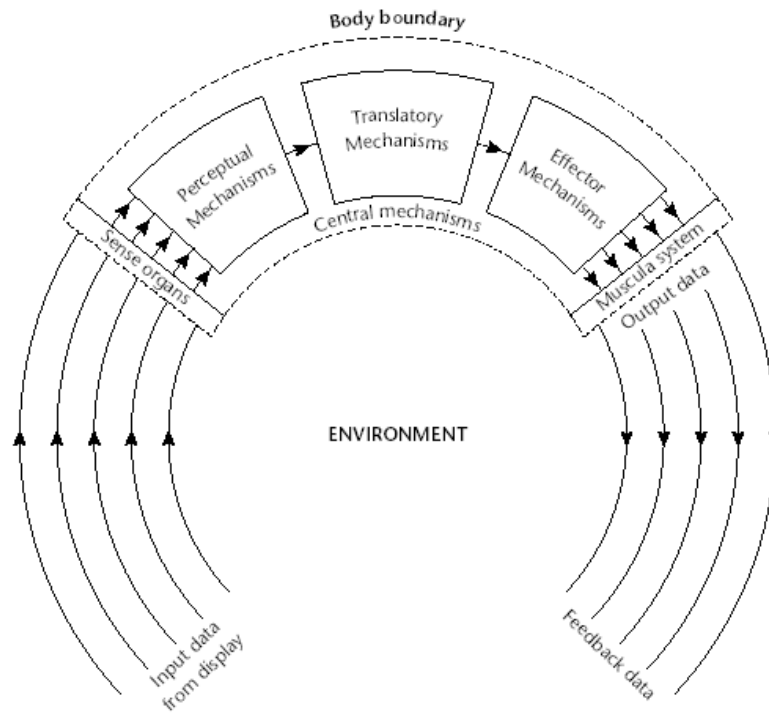
Question	Answer	Marks	Guidance
	<p><u>Control by the vasomotor centre and Vascular Shunt Mechanism</u></p> <p>9. Vascular shunt mechanism controlled by vasomotor control centre or VCC</p> <ul style="list-style-type: none"> • located in medulla oblongata • with cardiac control centre or CCC / with respiratory control centre or RCC <p>10. Chemoreceptors</p> <ul style="list-style-type: none"> • detect an increase in acidity or CO₂ or carbonic acid or lactic acid • detect a decrease in pH or O₂ <p>11. Proprioceptors</p> <ul style="list-style-type: none"> • detect movement (of muscle, tendons and joints) <p>12. Baroreceptors</p> <ul style="list-style-type: none"> • detect an increase in blood pressure <p>13. Information sent to the vasomotor centre or VCC</p> <ul style="list-style-type: none"> • uses the sympathetic nervous system • vasomotor nerves linked to tunica media or muscular layer of arteriole walls or pre-capillary sphincter or PCS <p>(muscles = increased blood flow)</p> <p>14. Decreased sympathetic stimulation of arterioles or pre-capillary sphincter or PCS leading to muscles</p> <p>15. Vasodilation of arterioles leading to muscles</p> <p>16. Vasodilation or relaxation of pre-capillary sphincter or PCS leading to muscles</p> <p>(organs e.g. liver, digestive system or gut, kidneys = decreased blood flow)</p> <p>17. Increased sympathetic stimulation of arterioles or pre-capillary sphincter or PCS leading to organs</p> <p>18. Vasoconstriction of arterioles leading to organs</p> <p>19. Vasoconstriction or contraction of pre-capillary sphincter or PCS leading to organs</p> <p><u>Venous Return</u></p> <p>20. the volume of blood returning to the heart (via the veins per beat)</p> <ul style="list-style-type: none"> • (problem) most of the blood has to travel against gravity or uphill • (problem) low or zero blood pressure in the veins • (solution) skeletal or muscular pump helps to squeeze blood back up to the heart <ul style="list-style-type: none"> ○ during concentric contraction muscles push against vein walls • (solution) pocket valves in veins prevent backflow of blood 		

Question	Answer	Marks	Guidance
	<ul style="list-style-type: none"> • (solution) respiratory pump helps to pull or suck blood back up to heart <ul style="list-style-type: none"> ○ during inspiration ○ due to high pressure below diaphragm or in abdomen ○ and low pressure above diaphragm or in thoracic cavity • (solution) smooth muscle around veins causes them to (veno)constrict <ul style="list-style-type: none"> ○ venomotor tone decreases lumen diameter / increases pressure in veins • (solution) gravity from above the heart • listing (not describing) venous return mechanisms <p>21. (during exercise) venous return or blood flow back to the heart increases</p> <p>22. (relationship) stroke volume depends on or relates to venous return / if venous return increases then stroke volume or cardiac output increases</p> <ul style="list-style-type: none"> • Starling's law (of the heart) <p>(stretch of atrial walls)</p> <p>23. (more blood enters atria) causing stretch of atrial walls</p> <ul style="list-style-type: none"> • this stimulates the SA node • increasing firing rate of SA node / increasing heart rate or HR <p>(stretch of ventricular walls)</p> <p>24. (more blood enters ventricles) causing stretch of ventricular walls</p> <ul style="list-style-type: none"> • increased end diastolic volume or EDV • this causes a more forceful contraction of ventricular walls • decreased end systolic volume or ESV • increasing stroke volume or SV <p>(Effect of VSM and increased VR on performance)</p> <ul style="list-style-type: none"> • increase in aerobic exercise / endurance capacity • delayed fatigue / delayed OBLA / delayed lactate threshold • faster recovery rate <p style="text-align: right;">[Total: 30 marks]</p>		[valves = BOD]

Section B - Acquiring Movement Skills

Question		Answer	Marks	Guidance											
2	(a)	<p>4 marks for 4 from:</p> <p>1. (Gross motor - characteristics) underpin skills or underlying (see accept box) / (involve or a potential for): physical movement or exercise / (physical) fitness / muscular or motor movement</p> <p>2. (gross motor - examples) strength / power / stamina / flexibility / (gross body) co-ordination / balance / equilibrium / speed</p> <p>3. (Psychomotor - characteristics) underpin skills or underlying (see accept box) / (involve or a potential for) information processing or decision making or perception or judgement / cognitive processes / initiation of movement (rather than actual movement)</p> <p>4. (psychomotor - examples) reaction or response time / (multi-limb) co-ordination / control precision / response orientation / rate control / manual dexterity / arm or wrist or finger speed or dexterity / arm-hand steadiness / aiming</p>		<table border="1"> <thead> <tr> <th>Accept</th> <th>Do not accept innate / genetic / a trait / inherited / enduring / stable</th> </tr> </thead> <tbody> <tr> <td>1. underpin skills or underlying once only - for Pt 1 or Pt 3 / physical abilities = BOD</td> <td>to do with body/ involves muscles</td> </tr> <tr> <td>2. types of...e.g. explosive strength</td> <td></td> </tr> <tr> <td>3. underpin skills or underlying once only - for Pt 3 or Pt 1 cognitive abilities</td> <td>to do with the mind or brain or thinking = TV mental / psychological</td> </tr> <tr> <td>4.</td> <td>speed</td> </tr> </tbody> </table>	Accept	Do not accept innate / genetic / a trait / inherited / enduring / stable	1. underpin skills or underlying once only - for Pt 1 or Pt 3 / physical abilities = BOD	to do with body/ involves muscles	2. types of...e.g. explosive strength		3. underpin skills or underlying once only - for Pt 3 or Pt 1 cognitive abilities	to do with the mind or brain or thinking = TV mental / psychological	4.	speed	
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(b)	<p>Max of 5 Marks for 5 from:</p> <table border="1" data-bbox="353 331 1301 1331"> <tr> <td data-bbox="353 331 658 403">1. (Input data from display)</td> <td data-bbox="658 331 1301 403">input / data or information or cues or stimuli from display / environmental stimuli</td> </tr> <tr> <td data-bbox="353 403 658 507">2. (Sense organs / receptor systems)</td> <td data-bbox="658 403 1301 507">sense organs or senses or receptors or receptor systems receive stimuli or cues (from display or surroundings or environment)</td> </tr> <tr> <td data-bbox="353 507 658 579">3. (Central mechanisms)</td> <td data-bbox="658 507 1301 579">central mechanisms involve cognition or brain function or information processing</td> </tr> <tr> <td data-bbox="353 579 658 746">4. 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(Central mechanisms)	central mechanisms involve cognition or brain function or information processing	4. (Perceptual mechanisms)	perceptual mechanisms or perception interpret or make sense of or judge the information / perception includes selective attention / DCR process / detect-compare-recognise /	5. (Translatory mechanisms)	translatory mechanisms used for decision making / selects (correct) motor programme or response	6. (Effector mechanisms)	effector mechanisms send the decision or information or motor programme or impulses or messages to the muscles	7. (Muscular system)	muscular system or muscles initiate or carry out the movement or motor programme	8. (Output data / feedback data)	feedback available (from the movement)	9. (Environment)	the environment affects information processing (hence broken boundary line)	10. 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Whiting's model of information processing

Award 2 marks for accurate model with elements identified but no description

Question	Answer	Marks	Guidance															
(c)	<p>Six marks for six from: Both action and explanation needed for 1, 3 and 5 Positive reinforcement 1. (action) give praise or satisfier or positive feedback or rewards or approval / make activity enjoyable / show results or benefits (of healthy behaviour) / (explanation) (it will...) encourage or motivate or educate or persuade / make them want to continue or work harder / increase confidence or self-esteem / strengthen stimulus-response (SR) bond 2. (example) give praise or rewards for healthy eating or taking up jogging or other suitable eg</p> <p>Negative reinforcement 3. (action) take away negative or unpleasant stimulus or annoyer or negative feedback (explanation) (it will...) replace undesired or dysfunctional behaviour with desired behaviour / increase confidence or self-esteem / strengthen stimulus-response (SR) bond 4. (example) take away criticism when exercise programme starts or other suitable example</p> <p>Punishment 5. (action) give an unpleasant or noxious stimulus (explanation) (it will...) remove or stop unhealthy, undesired or dysfunctional behaviour / break the undesired stimulus-response (SR) bond / motivate them to try again 6. (example) tell them off or withdraw privileges when they eat junk food or other suitable example</p>	6	<p>Both action and explanation needed for 1, 3 and 5 Award KU for actions and / or explanations embedded in relevant example</p> <table border="1" data-bbox="1265 336 2056 1359"> <thead> <tr> <th data-bbox="1265 336 1662 371">Accept</th> <th data-bbox="1662 336 2056 371">Do not accept</th> </tr> </thead> <tbody> <tr> <td data-bbox="1265 371 1662 611">1. prevents drive reduction</td> <td data-bbox="1662 371 2056 611"></td> </tr> <tr> <td data-bbox="1265 611 1662 715">2. BAHL examples only</td> <td data-bbox="1662 611 2056 715"></td> </tr> <tr> <td data-bbox="1265 715 1662 986">3.</td> <td data-bbox="1662 715 2056 986">Telling off or criticising</td> </tr> <tr> <td data-bbox="1265 986 1662 1090">4. BAHL examples only</td> <td data-bbox="1662 986 2056 1090"></td> </tr> <tr> <td data-bbox="1265 1090 1662 1329">5.</td> <td data-bbox="1662 1090 2056 1329">(action) give disapproval = TV (explanation) weaken undesired SR bond = TV</td> </tr> <tr> <td data-bbox="1265 1329 1662 1359">6. BAHL examples only</td> <td data-bbox="1662 1329 2056 1359"></td> </tr> </tbody> </table>		Accept	Do not accept	1. prevents drive reduction		2. BAHL examples only		3.	Telling off or criticising	4. BAHL examples only		5.	(action) give disapproval = TV (explanation) weaken undesired SR bond = TV	6. BAHL examples only	
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(d)	<p>5 marks for 5 from:</p> <p>Open Loop / level 1 control Sub max 3 marks</p> <p>1. when (processing of information) feedback is not used / no time to act on feedback / no time for feedback / uses memory trace</p> <p>2. for fast or dynamic or reflex or ballistic skills or actions or motor programmes / for skills that are well-learned or grooved</p> <p>3. (sub routines of) skills performed with little conscious control or thought or subconsciously or automatically</p> <p>4. ...(therefore) increased capacity to attend to peripheral stimuli</p> <p>5. skills cannot be adjusted during movement (in main) / adjustments can only be made at next attempt</p> <p>PTO for Closed Loop mark scheme (6-16)</p>	5	<table border="1"> <thead> <tr> <th data-bbox="1263 236 1662 268">Accept</th> <th data-bbox="1662 236 2054 268">Do not accept</th> </tr> </thead> <tbody> <tr> <td data-bbox="1263 268 1662 440">1. no time to compare perceptual and memory trace / no feedback</td> <td data-bbox="1662 268 2054 440"></td> </tr> <tr> <td data-bbox="1263 440 1662 544">2.</td> <td data-bbox="1662 440 2054 544"></td> </tr> <tr> <td data-bbox="1263 544 1662 716">3. requires no conscious thought = BOD</td> <td data-bbox="1662 544 2054 716"></td> </tr> <tr> <td data-bbox="1263 716 1662 820">4.</td> <td data-bbox="1662 716 2054 820"></td> </tr> <tr> <td data-bbox="1263 820 1662 987">5.</td> <td data-bbox="1662 820 2054 987"></td> </tr> </tbody> </table>		Accept	Do not accept	1. no time to compare perceptual and memory trace / no feedback		2.		3. requires no conscious thought = BOD		4.		5.	
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	<p>Closed Loop Sub max 3 marks: 6. skills can be adjusted during performance</p> <p>7. uses intrinsic or internal or proprioceptive or kinaesthetic feedback (to monitor performance)</p> <p>(Level 2 control) 8. subconscious</p> <p>9. uses memory trace / feedback loop is short</p> <p>(Level 3 control) 10. conscious</p> <p>11. compares perceptual and memory trace / compares what you are doing with what you remember</p> <p>12. ...(if these match) the skill or correct movements are reinforced</p> <p>13. ...(if these don't match) incorrect movement can be adjusted or corrected</p> <p>14. feedback loop is longer / information relayed via brain</p> <p>15. improvement or progress or learning occurs (during performance)</p> <p>16. can result in jerky movements (while skill is adjusted)</p>		6.	
			7.	uses feedback on own = TV
			8.	
			9.	
			10.	
			11.	Perceptual trace on own = TV
			12. only award Pt 12 if Pt 11 made	
			13. only award Pt 13 if Pt 11 made	
			14.	'uses brain' on own
			15.	
			16.	

(e)* Levels of Response	
<p>Level 3 (8 – 10 marks) A comprehensive answer:</p> <ul style="list-style-type: none"> • detailed knowledge & understanding • effective analysis/critical evaluation and/or discussion/explanation/development • clear and consistent practical application of knowledge • accurate use of technical and specialist vocabulary • high standard of written communication 	<p>At L3 responses <u>are likely</u> to show:</p> <ul style="list-style-type: none"> • accurate description of all types of transfer (positive / negative / proactive / retroactive/ bilateral) <ul style="list-style-type: none"> ○ with no REP of key terms (positive / negative) in description • accurate coverage of helpful and harmful impacts • inclusion of other evaluation points
<p>Level 2 (5 - 7 marks) A competent answer:</p> <ul style="list-style-type: none"> • satisfactory knowledge & understanding • analysis/critical evaluation and/or discussion/explanation/development attempted with some success • some success in practical application of knowledge • technical and specialist vocabulary used with some accuracy • written communication generally fluent with few errors 	<p>At L2 responses <u>are likely</u> to show:</p> <ul style="list-style-type: none"> • accurate description of most types of transfer (positive / negative / proactive / retroactive/ bilateral) <ul style="list-style-type: none"> ○ with few if any REP of key terms (positive / negative) in description • satisfactory coverage of helpful and harmful impacts
<p>Level 1 (1 - 4 marks) A limited answer:</p> <ul style="list-style-type: none"> • basic knowledge & understanding • little or no attempt to analyse/critically evaluate and/or discuss/explain/develop • little or no attempt at practical application of knowledge; • technical and specialist vocabulary used with limited success • written communication lacks fluency and there will be errors, some of which may be intrusive 	<p>At L1 responses <u>are likely</u> to show:</p> <ul style="list-style-type: none"> • accurate description of positive / negative transfer <ul style="list-style-type: none"> ○ perhaps with REP of key terms (positive / negative) in description • identification of or attempt at describing other types of transfer - with inaccuracies in descriptions • no helpful or harmful impacts
<p>[0 marks] No response or no response worthy of credit.</p>	

Question	Answer	Marks	Guidance
(e)*	<p>Indicative content: Candidate responses are likely to include:</p> <p>Numbered points = knowledge / understanding Bullet points = development of knowledge (Describe the different types of transfer)</p> <ol style="list-style-type: none"> 1. Transfer is the influence of one skill on another 2. Positive Transfer <ul style="list-style-type: none"> • one skill or movement helps the learning (and performance) of another e.g. throwing helps learning of badminton smash or other suitable e.g. 3. Negative Transfer <ul style="list-style-type: none"> • one skill or movement hinders the learning (and performance) of another e.g. firm wrist in tennis hinders learning the loose wrist in badminton or other e.g. • occurs when performer is required to produce a new response in a well-known situation • effects (thought to be) limited or temporary 4. Proactive Transfer <ul style="list-style-type: none"> ○ previously learned skill affects learning (or performance) of current or later skill / current skill learning affects future skill e.g. a tennis player takes up badminton - the previously learned smash in tennis affects the current learning of the overhead clear in badminton ○ can be positive or negative 5. Retroactive Transfer <ul style="list-style-type: none"> • current learning of a (new) skill affects performance of a previously learned skill / learning now affects a skill learned in the past • can be positive or negative e.g. the current learning of the badminton overhead clear affects the previously learned tennis smash (can be +ve –ve) or other suitable e.g. • negative retroactive transfer less likely with highly skilled performers e.g. Andy Murray’s tennis would not be adversely affected by playing recreational badminton or other suitable eg 6. Bilateral Transfer <ul style="list-style-type: none"> • transfer from limb to limb / transfer from side to side e.g. arm to arm / leg to leg e.g. GK diving to left and right / footballer kicking with both feet or other suitable eg <p>(...and critically evaluate their impact on the learning of movement skills) Helpful impacts of transfer on learning movement skills/ensuring positive transfer</p>	10	<p>relevant responses not listed should be acknowledged</p> <p>Pts 2+3: annotate BOD DEV if positive or negative used in description e.g. “positive transfer (tick) has a positive (BOD – DEV) effect...” (see discriminators)</p> <p>Pts 4+5: annotate BOD DEV if candidate state that they positively or negatively affect, rather than just affect</p>

Question	Answer	Marks	Guidance
	<p>7. can save time (as new skill not being learned from beginning) / can motivate</p> <p>8. best if previous skill well learned or grooved e.g. overarm throw transferred to tennis serve</p> <p>9. best when performer aware of transfer or knows about the principles of transfer</p> <p>10. likelihood of transfer increased if (processing) requirements similar</p> <p>11. degree of transfer dependent on number of elements that the two tasks share / effective if coach highlight similar elements of each skill or highlights where transfer can occur</p> <ul style="list-style-type: none"> • identical elements theory <p>12. strengthens SR bond / encourages similar S-R bond between two skills / transfers SR bond from one skill to other</p> <p>13. practice conditions should reflect competition conditions e.g. accept any suitable example</p> <p>14. can help develop correct motor programme</p> <p>15. Bilateral transfer valuable in some games e.g. accept any suitable example</p> <p>Harmful impacts of transfer on learning movement skills</p> <p>16. performer can respond incorrectly to similar stimuli (from a different skill) e.g. experienced tennis player learning squash plays forehand with stiff wrist</p> <p>17. can hinder stimulus response compatibility</p> <p>18. performer can confuse subroutines between two skills</p> <p>19. don't teach conflicting skills close together e.g. in same week or term</p> <ul style="list-style-type: none"> • performer can be confused by different kinaesthetic feedback (between two skills) <p>20. Negative transfer can occur unless original skill well learned</p> <p>21. Negative transfer can de-motivate</p> <p>22. Negative transfer can 'waste' time (while incorrect movt eliminated/new skill re-learned)</p>		

Question	Answer	Marks	Guidance
	<p>Other evaluation points:</p> <p>Practice:</p> <ul style="list-style-type: none"> • variable practice helps to encourage transfer / varied practice gives a wide range of experiences (that can be transferred from training to the 'real game') • for complex skills practise easier version first • for simple skills practices can be more difficult <p>Schema:</p> <ul style="list-style-type: none"> • transfer links with or supports schema theory / transfer helps to build schema or experiences (stored in the LTM) / transfer increased if or when the performer has lots of experience <p>e.g. positional play for an experienced footballer could transfer positively if they took up hockey</p> <ul style="list-style-type: none"> • schema can be used for future performance or modification of motor programmes • when first skill is well learned, opportunities for expanding schema are increased <p>e.g. a well grooved top spin forehand in tennis offers more opportunity for transfer to a cross court forehand</p> <p>And:</p> <ul style="list-style-type: none"> • (it could be argued that) all learning is based on transfer • transfer involves learning through the influence of skills with similar response requirements • judgement or perception (of environment) can be affected by transfer • transfer can be used to update or modify motor programmes 		

Question			Answer	Marks	Guidance			
3	(a)	(ii)	2 marks for 2 from:	2	Accept			
			1. (adults)		150 minutes(moderate) per week/ 75 minutes (vigorous) per week / 30 mins 5 times per week / equivalent mix of moderate and vigorous (e.g. 2 x 30 min runs + 30 mins fast walking	1. without ref to adults	Do not accept	
			2. (adults)		muscle strengthening on two (or more) days per week	2. without ref to adults		
			3. (children)		for children or young people (at least) 60 minutes a day (moderate to vigorous)	3. for children 5 or 6 or 7 x 60 mins per week		without ref to children
			4. (children)		for children (at least) three times a week vigorous intensity activities including high(er) impact activities or activities that strengthen muscles or bones	4.		without ref to children

Question			Answer	Marks	Guidance	
3	(b)	(i)	<p>4 marks for 4 from 2 marks for theory / 2 marks for practical examples</p> <p>Benefits - accept first two attempts only</p> <p>1. physical benefits or skills or wellbeing / improved health or fitness or BAHL</p> <p>2. (physical e.g.) learning camp craft or first aid or survival techniques or other suitable skill / fitness from walking or sailing or other suitable physical example</p> <p>3. personal benefits or skills / stress relief / catharsis / self-awareness or development or confidence or esteem or respect or fulfilment or discipline /self-realisation / self-actualisation / knowledge of strengths & weaknesses / learn about themselves /overcome fears / mental strength / emotional control / challenge / character building / sense of achievement or satisfaction / independence / sense of freedom</p> <p>4. (personal e.g.) (overcoming fears) from abseiling (sense of achievement) from completing night walk or other suitable personal example</p> <p>5. leadership / responsibility</p> <p>6. (l'ship eg) from leading a group hill walking or other suitable leadership example</p> <p>7. cognitive or thinking skills / decision making / problem solving</p> <p>8. (cognitive e.g.) planning route or other suitable eg</p>	4	<p>Accept examples when linked to benefit / only ORec examples / name of activity on own if with obvious / convincing link to benefit</p>	<p>Do not accept</p>
					1.	examples of physical benefits
					2.	
					3. enjoyment / fun = BOD	knowing what they are good at / courage / life skills / /sportsmanship / moral values
					4.	
					5.	
					6.	
					7.	
					8.	

Question	Answer	Marks	Guidance	
	9. commitment / determination		9.	
	10.(commitment e.g.) carrying on in difficult conditions while canoeing or other suitable commitment example		10.	
	11.social benefits or skills / teamwork / bonding / sharing / co-operation / communication / trust / loyalty / make friends / meet new people		11.	Improve social live / socialise = TV
	12.(social e.g.) While on a DofE expedition or other suitable social example		12.	
	13.preparation for lifelong participation / preparation for career / gain awards or qualifications / can achieve Dof E or BELA or 'Kayak 1 star' or other example of qualifications		13.	'preparation skills or benefits' on own / preparation for later life
	14.(preparation e.g.) can achieve Dof E or BELA or 'Kayak 1 star' or other example of qualifications (if not given above) / by becoming an Outdoor Ed or Outdoor Rec instructor or other suitable preparation example		14.	
	15.aesthetic appreciation or awareness / learn about or respect nature or natural environment / improved quality of life or qualitative benefits / spiritual experience / 'buzz' or 'thrill' or 'rush' / 'sense of or feeling of risk' or adventure or excitement		15.	'experience' the great outdoors' = TV learn about surroundings = TV 'risk' on own / (feeling) danger
	16.(aesthetic e.g.) from walking in countryside / (learn about environment) from being part of conservation project / (get feeling of risk) from abseiling or other suitable example		16.	

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3	(b)	(ii)	<p>Direct comparison needed for each mark Accept first two attempts only Sub max 1 for answers that finish with ‘...whereas Outdoor Recreation is not’</p> <table border="1"> <thead> <tr> <th></th> <th>Outdoor Education</th> <th>Outdoor Recreation</th> </tr> </thead> <tbody> <tr> <td>1. (why)</td> <td>for learning</td> <td>for enjoyment or fun</td> </tr> <tr> <td>2. (when)</td> <td>in school or college time / school trips / extracurricular / (may be) compulsory (in school) / part of National Curriculum</td> <td>in own time / when you decide / leisure time / hobby / holiday / not compulsory / not part of National Curriculum</td> </tr> <tr> <td>3. (who)</td> <td>school children / specialist staff / instructors</td> <td>adults / for all / specialists or instructors not required</td> </tr> <tr> <td>4. (risk and safety)</td> <td>(strict) health and safety rules or risk assessment / perceived risk</td> <td>self imposed or no health and safety or risk assessment / (more potential for) real risk</td> </tr> <tr> <td>5. (org)</td> <td>formal / organised / led by school or by OEd centre</td> <td>Informal / less organised / organised or led by self or friends or club</td> </tr> </tbody> </table>		Outdoor Education	Outdoor Recreation	1. (why)	for learning	for enjoyment or fun	2. (when)	in school or college time / school trips / extracurricular / (may be) compulsory (in school) / part of National Curriculum	in own time / when you decide / leisure time / hobby / holiday / not compulsory / not part of National Curriculum	3. (who)	school children / specialist staff / instructors	adults / for all / specialists or instructors not required	4. (risk and safety)	(strict) health and safety rules or risk assessment / perceived risk	self imposed or no health and safety or risk assessment / (more potential for) real risk	5. (org)	formal / organised / led by school or by OEd centre	Informal / less organised / organised or led by self or friends or club	2	<table border="1"> <thead> <tr> <th>Accept</th> <th>Do not accept</th> </tr> </thead> <tbody> <tr> <td>Comparative comments such as: ‘OEd more structured or organised than ORec’</td> <td>OEd for education = REP ORec for recreation = REP</td> </tr> <tr> <td>1.</td> <td></td> </tr> <tr> <td>2. set time v own time = BOD</td> <td></td> </tr> <tr> <td>3.</td> <td></td> </tr> <tr> <td>4. OEd ‘more’ organised</td> <td></td> </tr> <tr> <td>5.</td> <td></td> </tr> </tbody> </table>	Accept	Do not accept	Comparative comments such as: ‘OEd more structured or organised than ORec’	OEd for education = REP ORec for recreation = REP	1.		2. set time v own time = BOD		3.		4. OEd ‘more’ organised		5.	
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(sport/sponsorship)																					
1. (image / status)	(can) raise status or give healthy or 'cool' image to the sport or club or performer or sponsor																				
(Sport)																					
2. (kit/ equipment/ facilities / coaching)	(with sponsorship money) teams can employ coaches or buy kit or equipment or other suitable example / pay entry fees to competitions etc /(some) sponsors provide kit or equipment /(improved) facilities for players or spectators																				
3. (prof)	sponsorship allows: professionalism / full-time training / better results or performances																				
4. (security)	sponsorship gives performers or clubs (financial) security or stability																				
(Sponsor)																					
5. (brand awareness / image)	brand awareness or advertising / increased publicity or sales / exposure of sponsors' products																				
6. (not too expensive)	sponsorship a relatively inexpensive form of advertising / sponsorship is tax deductible																				
7. (hospitality)	(corporate) hospitality for sponsor																				

Question		Answer	Marks	Guidance		
3	(d)	Disadvantages of sport-sponsorship relationship Sub max 3				
		(sport/sponsorship)				
		8. (bad image)		some products e.g. tobacco / alcohol / fast food are unhealthy or reflect badly on sport / bad behaviour or corruption can reflect badly on sponsor	8.	
		(sport)				
		9. (pressure)		pressure of sponsors' demands / performers (may be) restricted to using or wearing certain products	9.	Pressure to win on own = TV
		10. (financial)		uncertain availability or (sudden) withdrawal of sponsorship / (negative) impact of (economic) recession	10.	
		11. (tradition / ethos)		tradition or ethos or nature of sport or club lost / devalues the sport / too much focus on winning / increased links with deviance	11.	
		12. (inequality)		not all sports equally sponsored / only the big sports get sponsorship / minority sports 'miss out'	12.	
		(sponsor)				
		13. (risky)		risky as 'success' not guaranteed (e.g. due to disgrace or injury or relegation) / risky as event may be cancelled	13.	

(e)* Levels of Response	
<p>Level 3 (8 – 10 marks) A comprehensive answer:</p> <ul style="list-style-type: none"> • detailed knowledge & understanding • effective analysis/critical evaluation and/or discussion/explanation/development • clear and consistent practical application of knowledge • accurate use of technical and specialist vocabulary • high standard of written communication 	<p>At L3 responses <u>are likely</u> to show:</p> <ul style="list-style-type: none"> • detailed discussion of commercialisation of Olympic Games • detailed explanation of how Olympic games can be a vehicle for Nation Building • satisfactory balance between both parts of question
<p>Level 2 (5 - 7 marks) A competent answer:</p> <ul style="list-style-type: none"> • satisfactory knowledge & understanding • analysis/critical evaluation and/or discussion/explanation/development attempted with some success • some success in practical application of knowledge • technical and specialist vocabulary used with some accuracy • written communication generally fluent with few errors 	<p>At L2 responses <u>are likely</u> to show:</p> <ul style="list-style-type: none"> • satisfactory discussion of commercialisation of Olympic Games • satisfactory explanation of how Olympic Games can be a vehicle for Nation Building • an attempt at balance between both parts of question
<p>Level 1 (1 - 4 marks) A limited answer:</p> <ul style="list-style-type: none"> • basic knowledge & understanding • little or no attempt to analyse/critically evaluate and/or discuss/explain/develop • little or no attempt at practical application of knowledge; • technical and specialist vocabulary used with limited success • written communication lacks fluency and there will be errors, some of which may be intrusive 	<p>At L1 responses <u>are likely</u> to show:</p> <ul style="list-style-type: none"> • basic discussion of commercialisation of Olympic Games • basic explanation of how Olympic Games can be a vehicle for Nation Building • limited or no success at addressing/balancing both parts of question
<p>[0 marks] No response or no response worthy of credit.</p>	

Question	Answer	Marks	Guidance
(e)*	<p>Indicative content: Candidate responses are likely to include: (relevant responses not listed should be acknowledged)</p> <p>Numbered points = knowledge / understanding Bullet points = likely to be dev of knowledge</p> <p>Commercialisation of the Olympic Games (OG) – discussion</p> <ol style="list-style-type: none"> 1. Los Angeles (1984) the turning point or start of commercialisation / LA the first highly commercialised OG 2. Peter Uberroth <ul style="list-style-type: none"> • responsible for commercialisation of the OG • (private) companies invested in or built the major facilities • since commercialisation, facilities have been more spectacular or equivalent 3. The Olympic Partner (TOP) programme / OG became attractive to or involved sponsors <ul style="list-style-type: none"> • companies as (official) sponsors or suppliers • they bought the right to display Olympic logo <ul style="list-style-type: none"> e.g. Coca-Cola / Visa/ McDonald's/ Panasonic/ UPS/ Kodak or other suitable example • (some) opposition to 'unhealthy' sponsors 4. OG commercialised due to TV / impact of media <ul style="list-style-type: none"> • impact of golden triangle • TV (or radio) companies paid for coverage rights • commercialism linked to growing (global) TV audience 5. (Many argue that) commercialism has 'saved' or improved the OG <ul style="list-style-type: none"> • commercialism now the norm • 'win ethic' now the norm <ul style="list-style-type: none"> e.g. accept suitable example such as temptation to cheat or drug taking 6. BUT (some argue that) commercialism has negatively changed the OG or that there are disadvantages to commercialism <ul style="list-style-type: none"> • undermines traditional aims or philosophy of OG 7. Countries or cities now see or acknowledge commercial or economic value in hosting OG <ul style="list-style-type: none"> • OG can make profit for or raise companies' profile • reference to credit crunch or financial issues leading up to an OG 	10	BOD slightly inaccurate date+venue links– and consider this when awarding level and mark

Question	Answer	Marks	Guidance
	<p>Background discussion</p> <p>8. (pre 1970s / 1980s) OG amateur / professionalism frowned upon</p> <ul style="list-style-type: none"> • most athletes had full time jobs and trained in spare time / athletes had no or very limited funding <p>e.g. trust funds for UK athletes</p> <p>9. 'Athletes' from some countries were better funded or supported than others / difference or unfairness between some countries and others</p> <p>e.g. USA – scholarship system</p> <p>e.g. Eastern bloc' – state funded / sports schools</p> <p>10. (to realistically compete) athletes needed to train or commit full time</p> <p>11. Transition from amateurism to professionalism associated with scandal / was troubled</p> <ul style="list-style-type: none"> • evidence of '<i>shamateurism</i>' or fake amateurism <p>12. The Montreal Games (1976) a financial disaster</p> <ul style="list-style-type: none"> • host countries under great financial pressure before commercialisation / host countries shied away from hosting / hosting needed to be made 'attractive' <p>13. IOC against commercialisation of Games at first</p> <ul style="list-style-type: none"> • after Montreal Olympics the IOC allowed more commercial involvement / IOC accepted need for commercialism • IOC decisions increasingly linked to funding 		

Question	Answer	Marks	Guidance
	<p>The Olympic Games (OG) as a vehicle for Nation Building – explanation</p> <p>14. Countries promoted or showcased or publicised / increased national pride or prestige or status or image or patriotism</p> <ul style="list-style-type: none"> • (especially) for host country e.g. China or other suitable example • (or) for country of (successful visiting) athletes e.g. Ethiopia or other suitable example <p>15. Shop-window effect</p> <ul style="list-style-type: none"> • the world sees (the best of) a nation <p>16. OG can be used as a ‘political tool’ / sport and politics linked</p> <p>e.g. Munich OG / Berlin 1936 (Hitler and Jesse Owens) or other examples</p> <ul style="list-style-type: none"> • sporting success can reflect political success or power • increased political stability or popularity possible through sport <p>17. Legacy benefits / economic benefits</p> <p>e.g. facilities or housing or infrastructure or other suitable legacy benefits</p> <p>e.g. tourism / more jobs or other suitable economic benefits</p> <p>18. Feel good factor or appeasement or unity for host nation or home supporters</p> <p>e.g. London 2012 or other suitable example</p> <p>19. (In China the) government controls and funds (much of) sport / China has centralised system</p> <p>20. Some countries (can) hide behind OG success / create a false picture</p> <p>21. Beijing Olympics (2008) -‘coming out party’ for China / opportunity for China to show its (alleged) changing (more open) system or (alleged) political reform / chance to show that Communism works / to show China’s emergence as a world power</p> <ul style="list-style-type: none"> • opportunity for China to show its economic status • opportunity for China to conceal human rights issues <p>22. London 2012 - success of organisation</p> <ul style="list-style-type: none"> • success of Team GB 		

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