

Mark Scheme – Homework 1.2.4 – Muscular System

1) C

2)

Question Number	Answer	Mark
1(i)	<b>B</b> Hamstrings	<b>(1)</b>

3)

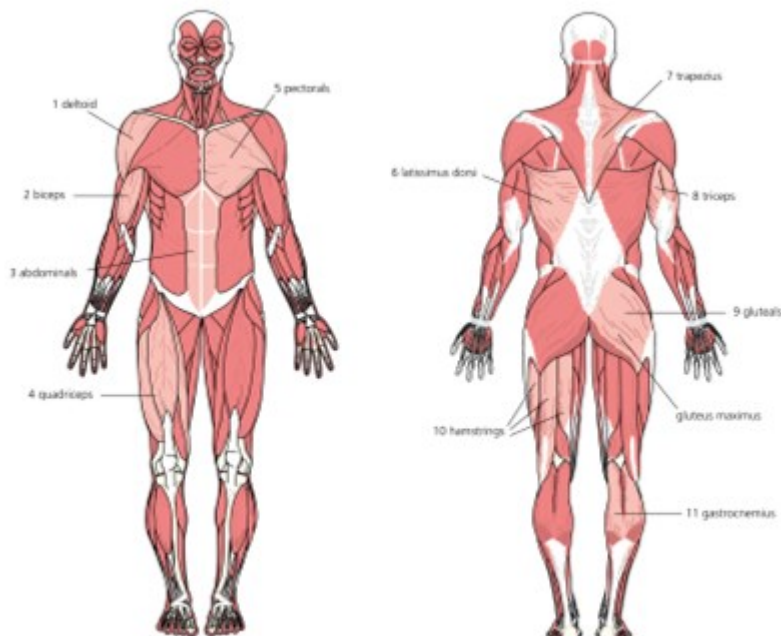
Question Number	Answer	Mark
<b>1i</b>	Q - Which of the following statements correctly explains the term isometric?  <b>A</b> – (An isometric muscle contraction does not result in movement)	<b>(1)</b>

4)

Question Number	Answer	Mark
<b>1i</b>	<b>C</b> Muscles are arranged in pairs, for example the hamstrings and quadriceps	<b>1</b>

5) A

6)



7)

Increased rate / depth in breathing.	Drop in resting respiratory rate. Increased efficiency in gaseous exchange. Increase in tidal volume. Increase in VO2 Max.
Increased HR / SV / Blood Flow / Cardiac output.	Drop in resting HR. Increase SV. Increased Maximum Cardiac Output. Increased red blood cell count.
-	Stronger bones. Increased bone density.
Fatigue / Equivalent	Increased muscle size. Increased strength. Increased Muscular Endurance. Increased Myoglobin.

8)

- A - Biceps
- B - Quadriceps
- C - Gastrocnemius
- D - Deltoid / Latissimus Dorsi
- E - Abdominals

9)

- ai) Extended/Extension  
Flexing/Flexion  
Hip
- ii) Flexed  
Biceps
- b) Ball & Socket

10)

Increase Size / Increase Mitochondria production / Increase muscle tone / Increased strength/ Increased Muscular Endurance / Increased Capillaries.

11)

- b) Back of the upper thigh (do not accept – back of leg / top of thigh)
- ci) Quadriceps (do not accept quads)
- ii) One muscle relaxes to allow the other to contract (do not accept muscles working in pairs/opposites)

12)

- i) Fast Twitch
- ii) Tires quickly / cant last for long periods of time.
- iii) Weight / Interval / Plyometrics / Circuit / Resistance Training

13)

Question Number	Answer	Mark
12(a)	Bicep/s Bicep brachii	(1)

Question Number	Answer	Mark
12(b)	Abduction  NOT adduction	(1)

14)

Question	Answer	Do not accept	Additional Guidance	Marks	Total
12	(a) • Gluteals	<i>Anything else</i>	<i>Accept phonetic spellings</i>  Only accept <b>FIRST</b> response given on line.	1x1	(1)
12	(b) • Latissimus dorsi • Trapezius	<i>Anything else including abbreviations</i> <i>Lats</i> <i>Pecs</i>	<i>Accept phonetic spellings</i>  Only accept <b>FIRST</b> response given on line.	1x1	(1)
12	(c) • Pectorals OR • Latissimus dorsi		<i>Accept phonetic spellings</i>  Only accept <b>FIRST</b> response given on line.	1x1	(1)

Question		Answer	Do not accept	Additional Guidance	Marks	Total
13		(a) <ul style="list-style-type: none"> <li>• Weight training</li> <li style="text-align: center;">Or</li> <li>• Resistance training</li> <li style="text-align: center;">Or</li> <li>• Resistance</li> <li style="text-align: center;">Or</li> <li>• Weight</li> <li style="text-align: center;">Or</li> <li>• Weights</li> <li style="text-align: center;">Or</li> <li>• <i>Circuit training with weights</i></li> <li>•</li> </ul>	<i>Weight lifting</i> <i>Anything else</i>	<i>Accept phonetic spellings</i>  Only accept <b>FIRST</b> response given on line.	1x1	<b>(1)</b>
13		(b) <p>Any one weight bearing exercise activity e.g:</p> <ul style="list-style-type: none"> <li>• Running</li> <li>• Jogging</li> <li>• Walking</li> <li>• Weight bearing activity</li> <li>• Fartlek training session</li> <li>• Continuous training session</li> </ul>	<i>Any activity where not clearly maintaining own body weight e.g.</i> <i>Swimming</i> <i>Cycling</i> <i>Rowing</i> <i>Weight lifting</i> <i>Circuit training</i> <i>Cross training</i>  <i>Any activity which is short duration, e.g. vertical jump test</i>	<i>Accept specific sports which are weight bearing, e.g. rugby; aerobics; yoga; netball; tennis</i>	1x1	<b>(1)</b>

15)

<p>15</p>	<p><b>Aspect 1 - covers points 1-8</b></p> <p><b>Immediate/short-term effects</b> (cardiovascular system)</p> <ol style="list-style-type: none"><li>1. Increased heart rate</li><li>2. Increased <u>systolic</u> blood pressure (if stated credit point 3 as well)</li><li>3. Increased blood pressure</li></ol> <p><b>Immediate/short-term effects</b> (muscular system)</p> <ol style="list-style-type: none"><li>4. increased demand for oxygen/energy for muscular work</li><li>5. increased carbon dioxide production</li><li>6. increased temperature</li><li>7. lactic acid production (during anaerobic work) (energy conversion)</li><li>8. muscle fatigue</li></ol> <p>Do not accept tire/ache</p> <p><b>Aspect 2 - covers points 9 - 18</b></p> <p><b>Regular participation/long term effects</b> (cardiovascular system)</p> <ol style="list-style-type: none"><li>9. increased strength / size of heart muscle</li><li>10. increased <u>stroke volume</u> (due to increased strength of cardiac muscle)</li><li>11. increased <u>maximum</u> cardiac output</li><li>12. increased capillarisation (accept increased capillaries)</li><li>13. increase in number of red blood cells</li><li>14. drop in <u>resting</u> heart rate (due to increased stroke volume)</li></ol> <p>(accept quicker return to RHR for same reason)</p> <p><b>Regular participation/long term effects</b> (muscular system)</p> <ol style="list-style-type: none"><li>15. increased strength of ligaments/tendons</li><li>16. increased size/strength of skeletal muscle / muscular endurance</li><li>17. increased mitochondria (site of aerobic respiration)</li><li>18. increased myoglobin (equivalent to an oxygen 'store' in the muscle).</li></ol> <p>NB must be clear whether candidate is referencing immediate or long-term effects NB if system not stated can still gain credit</p>
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Level	Mark	Descriptor
<b>Level 0</b>	0	No rewardable material
<b>Level 1</b>	1-2	<p><i>Candidates will produce brief and narrative responses, making a limited number of simple statements, probably with limited reference to the question.</i></p> <p><i>Candidate's writing communicates ideas using everyday language, but lacks clarity and organisation. There will be frequent errors in candidates' spelling, grammar and punctuation.</i></p> <p>1 or 2 content marks, no need for balance 0 or 1 QWC (insufficient correct content to award 2 for QWC)</p>
<b>Level 2</b>	3-4	<p><i>Candidates' responses will be mostly accurate and include relevant factual material. Shows some understanding through description and explanation, although content more reflective of description than explanation</i></p> <p><i>Candidate's writing communicates with accurate use of appropriate terminology, and the organisation of the response shows some direction and control. There will be few errors in candidates' spelling, grammar and punctuation.</i></p> <p>2 or 3 content marks If 3 content must span both aspects of question 0,1 or 2 for QWC</p>
<b>Level 3</b>	5-6	<p><i>Candidates will offer factually accurate and sustained responses that relate well to the focus of the question and have successfully addressed all aspects of the question. Shows sound understanding and can provide a clear description and explanation.</i></p> <p><i>Candidate's writing communicates ideas effectively using appropriate terminology, and organises material clearly and coherently. Spelling, punctuation and grammar will be accurate throughout the response.</i></p> <p>4 or 5 content marks Content must span both aspects of question, if not remains in Level 2 1 or 2 for QWC</p>