

16+ PE Paper SPECIMEN – Mark Scheme

1. Hinge
2. Bone to bone
3. Aorta
4. Alveoli
- 5.

	<b>(b) Specific example of use in sport</b>
(Cardiovascular fitness)	Marathon running (1)
(Agility)	Dodging /avoiding a tackle (1)
(Balance)	A gymnast doing a handstand (1)

Accept other appropriate responses.

6. Decrease in resting heart rate
7. An increase in tolerance to lactic acid
- 8.

<p>5 marks for 5 of:</p> <ol style="list-style-type: none"> <li>1. Increase in heart rate/HR</li> <li>2. Increase in stroke volume/SV</li> <li>3. Increase in cardiac output/Q</li> <li>4. <b>Increases</b> blood flow/oxygen to (working) muscles</li> <li>5. directs blood away from other organs <b>OR less</b> blood to other organs</li> <li>6. Increase in blood pressure due to the increase in demand for oxygen (from the working muscles)</li> <li>7. <b>Increase</b> in blood lactate/lactic acid/CO<sub>2</sub> because muscles are working</li> <li>8. Blood temperature increases to help control of body temperature</li> <li>9. Vascular shunt <b>OR</b> vasodilation of blood vessels to muscles <b>OR</b> vasoconstriction of blood vessels to other organs</li> </ol>	<p><b>5</b></p> <p>5 x (AO2)</p>	<p>Do not accept: long-term adaptations e.g. stronger heart</p> <p>Pt 4 - Blood flows to muscles = TV as need <b>more/increase</b></p> <p>More blood to arms/legs = BOD pt. 4</p> <p>Lactic acid builds up in muscles – TV Lactic acid produced – TV LA found in the blood – TV</p>
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9.

**3 marks for 3 from:**

**1 mark for:**

Occurs during exercise/occurs when lack of oxygen/during anaerobic exercise.

**2 marks for 2 from:**

1. Causes fatigue/tiredness
2. Causes pain/discomfort/soreness/aching
3. So more likely to stop or slow down
4. Can decrease performance/leads to poor performance/makes you less effective.

**Guidance**

Do not accept cramp as an effect.

10. Sit and reach test
11. Training three times a week
12. A series of exercises
13. The level of satisfaction
- 14.

a	One mark for: (Fitness) is a person's capacity to carry out activity without getting tired/fatigued OR what your body is capable of in sport OR being able to cope with the demands of everyday life / sport /	<b>1</b> 1 x (AO1)	Accept: The ability to function effectively / efficiently
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	environment OR how efficient/effective is your body OR how much work you can do before stopping/getting too tired						
15.	<table border="1" style="width: 100%;"> <tr> <td style="width: 5%; text-align: center;">b</td> <td style="width: 55%;">           Two marks for:            1. Increased likelihood of injury            2. Increased likelihood of raised blood pressure            3. More likely to suffer or increase in risk of CHD / heart attack / stroke / heart disease            4. More likely to suffer or increase risk of respiratory / lung disease            5. A decrease in bone density or more likely to suffer bone disease            6. May cause poor posture            7. Increase in weight         </td> <td style="width: 10%; text-align: center;"><b>2</b> 2 x (AO1)</td> <td style="width: 30%;">           Do not accept:            A decrease in physical fitness, obesity and Type 2 diabetes (in question)            Increased likelihood of illness (on own)= TV            Do not accept heart disease or examples of illnesses (on their own) – needs a <b>description</b> e.g. increase in heart disease            Do not accept stiffness of joints / lack of mobility / not having enough energy (physical fitness in question)            Do not accept arthritis            Accept Osteoporosis (pt 5)            Accept: Any other described named illness that is a consequence of a sedentary lifestyle.         </td> </tr> </table>	b	Two marks for: 1. Increased likelihood of injury 2. Increased likelihood of raised blood pressure 3. More likely to suffer or increase in risk of CHD / heart attack / stroke / heart disease 4. More likely to suffer or increase risk of respiratory / lung disease 5. A decrease in bone density or more likely to suffer bone disease 6. May cause poor posture 7. Increase in weight	<b>2</b> 2 x (AO1)	Do not accept: A decrease in physical fitness, obesity and Type 2 diabetes (in question) Increased likelihood of illness (on own)= TV Do not accept heart disease or examples of illnesses (on their own) – needs a <b>description</b> e.g. increase in heart disease Do not accept stiffness of joints / lack of mobility / not having enough energy (physical fitness in question) Do not accept arthritis Accept Osteoporosis (pt 5) Accept: Any other described named illness that is a consequence of a sedentary lifestyle.		
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16.	Three marks from: <ol style="list-style-type: none"> <li>1. make friends with other members/friendships increased (via exercise)</li> <li>2. feeling of belonging (to a group)</li> <li>3. less loneliness experienced</li> <li>4. have a common experience (with others) or you can share your experiences (with others)</li> <li>5. can lead to other interests/friendships beyond the gym</li> </ol>
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17.

(c)	<p>Four marks for:</p> <ol style="list-style-type: none"> <li>1. Less likely to be <b>injured</b> and therefore less stressed</li> <li>2. Less likely to be <b>ill</b> or suffer from disease / named illness or feel healthier therefore less stress</li> <li>3. More likely to <b>control your weight</b> and therefore less likely to be stressed</li> <li>4. Have better <b>body posture</b> and therefore less stress</li> <li>5. More likely to be <b>fit</b> and therefore less stressed</li> <li>6. Activity can release stress busting <b>hormones</b> /endorphins</li> <li>7. Get rid of excess energy / tension for less stress / relaxes you or can feel a <b>cathartic/frustration/aggression/anger</b> release when exercising and therefore less stressed</li> <li>8. Can <b>forget</b> stressors or escapism or clear your mind</li> <li>9. Make you more <b>confident</b> and therefore less stressed</li> <li>10. Better <b>body image</b> so you feel less stressed about your appearance</li> </ol>	<p><b>4</b> 4 x (AO3)</p>	<p>Responses should refer to <b>ways of managing stress</b> : e.g. lowering / controlling stress or being happier / less anxious / feeling better / relaxes / removes worries etc... Do not accept (on its own) managing stress (in question) Accept physical activity may help to control your weight and increase your fitness to make you less stressed = 2 marks</p>
	<ol style="list-style-type: none"> <li>11. Using <b>relaxation</b> techniques from yoga classes may lead to less stress/anxiety or exercise releases muscular tension so you feel relaxed</li> <li>12. Having <b>fun</b> / enjoyment reduces stress or enjoying being with others/friends to reduce stress</li> <li>13. <b>Winning</b> a game/tournament / good performance can improve self-esteem / reduce stress.</li> <li>14. <b>Sense of belonging</b> or providing a support network to reduce stress</li> </ol>		

18.

Three marks for:			<b>3</b>	Accept any food that is regarded as rich in the appropriate dietary component					
<table border="1"> <thead> <tr> <th>Carbohydrate</th> <th>Protein</th> <th>Fibre</th> </tr> </thead> <tbody> <tr> <td> <b>One mark for:</b>  eg pasta, potatoes, cereal, bread, fruit </td> <td> <b>One mark for:</b>  eg fish, meat, eggs, nuts, oats </td> <td> <b>One mark for:</b>  eg Fruit vegetables, wholemeal bread, beans, lentils, cereals , brown bread </td> </tr> </tbody> </table>	Carbohydrate	Protein	Fibre	<b>One mark for:</b>  eg pasta, potatoes, cereal, bread, fruit	<b>One mark for:</b>  eg fish, meat, eggs, nuts, oats	<b>One mark for:</b>  eg Fruit vegetables, wholemeal bread, beans, lentils, cereals , brown bread		3 x (AO1)	
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19. Taking in the right amount of energy/right amount of each nutrient/CHO, fat, protein, vitamins, minerals or balancing energy output with energy input or eating the right amount for the amount of energy needed/expended

20. To avoid dehydration

21.

(i)	<p>One mark for:</p> <ol style="list-style-type: none"> <li>1. Helps digestion / large intestine function properly</li> <li>2. To reduce cholesterol</li> <li>3. Limit obesity/diabetes</li> <li>4. Limits certain cancers or helps prevent disease</li> </ol>	<p><b>1</b> 1 x (AO1)</p>	<b>Do not accept:</b>
(ii)	<p>One mark for:</p> <p><b>Protein</b></p>	<p><b>1</b> 1 x (AO1)</p>	<b>Do not accept:</b>
(iii)	<p>One mark for:</p> <p><b>Energy</b></p>	<p><b>1</b> 1 x (AO1)</p>	<b>Do not accept:</b>
	<p>Two marks for:</p> <ol style="list-style-type: none"> <li>1. Prevents disease / illness / maintain health</li> <li>2. (Helps) produce energy</li> <li>3. Essential for metabolism or helps for growth/repair/development</li> </ol>	<p><b>2</b> 2 x (AO1)</p>	<b>Do not accept:</b>

22.	Two marks from: 1. Using promotional material/media/role models to highlight benefits or to raise awareness 2. Provide specialized/adapted, (activity specific) equipment/facilities such as a hoist in a swimming pool Or to provide more facilities/equipment (that can be used by the disabled) 3. Improve general access such as a wheelchair ramp 4. Provide coaches who specialize in/are qualified for coaching disabled people 5. To provide/improve transport arrangements to be able to access activities 6. Provide subsidised/cheap/free facilities	2 2 x (AO1)	Do not accept: <ul style="list-style-type: none"> <li>Single words without description e.g. 'access'</li> <li>Fitness centre posters for Pt 1 = Vg</li> <li>Provide coaching = vg for point 4</li> </ul> Accept: Fitness centre posters that increase awareness = Pt 1 Provide swimming hoist for point 2
23.	(a) One mark from: 1. Women less likely to participate than men 2. Participation decreases with age 3. Less likely (than men) to participate in (organised) competition 4. Increase in participation in cricket, rugby and football	1 1 x (AO1)	<ul style="list-style-type: none"> <li>Assessors to check current trends: www.sportengland.org www.gov.uk/government/organisations/department-for-culture-media-sport</li> </ul>
	(b) Two marks for: 1. (ii) 2. (iii)	2 2 x (AO1)	

24.

Answer (AO1 – 2 marks)	Mark
Two marks for identifying any of the factors below preventing participation in sport.  Any <b>two</b> from: <ul style="list-style-type: none"> <li>Gender / sex / male or female</li> <li>Socio-economic group</li> <li>Disability</li> <li>Ethnicity /race /country of origin</li> </ul>	(2)

Answer (AO1 – 2 marks; AO2 – 2 marks)	Mark
<ul style="list-style-type: none"> <li>Adults may earn more <b>money</b> (1) so can afford to play more expensive sports like golf (1)</li> <li>Adults may have less <b>time</b> to participate due to work commitments (1) and therefore choose activities like squash that are played over a limited time period. (1)</li> <li>A younger person will have less <b>access/</b> be reliant on public transport/ as they are not old enough to drive (1) therefore they are restricted to their local sports centre/clubs (1)</li> </ul> Accept other appropriate responses  One mark for each identifying reason that age can affect participation (AO1) One mark for each appropriate applied <u>sporting</u> example (AO2)	(4)

25.

<b>Question number</b>	<b>Answer (A03 - 1 mark)</b>	<b>Mark</b>
<b>(a)(i)</b>	<p>One mark for analysis of the changing pattern in participation.</p> <ul style="list-style-type: none"> <li>• There has been a consistent fall in participant rates of 25-34 year olds (1)</li> <li>• The rate of participation for 25-34 year olds has dropped rapidly since 2012. (1)</li> </ul> <p>Accept other appropriate responses</p>	(1)

<b>Question number</b>	<b>Answer (A03 - 1 mark)</b>	<b>Mark</b>
<b>(a)(ii)</b>	<p>One mark for analysis of the changing pattern in participation.</p> <ul style="list-style-type: none"> <li>• There has been a consistent rise in participant rates of 35-44 year olds (1)</li> <li>• The rate of participation for 35-44 year olds has risen rapidly since 2012. (1)</li> </ul> <p>Accept other appropriate responses</p>	(1)

<b>Question number</b>	<b>Answer (A03 - 1 mark)</b>	<b>Mark</b>
<b>(b)</b>	<p>One mark for identification of the upward trend in the participation rates of adults aged 45+</p> <ul style="list-style-type: none"> <li>• Upwards/up/increase/more (or equivalent)</li> </ul> <p>Accept other appropriate responses</p>	(1)

<b>Question number</b>	<b>Answer (A03 - 1 mark)</b>	<b>Mark</b>
<b>(b)</b>	<p>One mark for identification of the upward trend in the participation rates of adults aged 45+</p> <ul style="list-style-type: none"> <li>• Upwards/up/increase/more</li> </ul>	(1)

<b>Question number</b>	<b>Answer (A03 - 2 marks)</b>	<b>Mark</b>
<b>(c)</b>	<p>Two marks for any of the following reasons (based on analysis of the graph) why the trend in participation rates of adults aged 45+ in 2022 will continue to rise</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• There has been a steady increase in participation rates every year since 2002 (1)</li> <li>• The age group 35-44 some of whom will be in this age group in 2022 also shows an increase so the rise in participation is likely to continue (1)</li> </ul> <p>Accept other appropriate responses</p>	(2)

26. Shaking hands with an opponent

27.

<p>Three marks from:</p> <ol style="list-style-type: none"><li>1. before or during performance imagery can improve concentration by blocking out distractions</li><li>2. imagery can increase confidence by imagining success or satisfaction/happiness with the performance.</li><li>3. before or during performance imagery can help with relaxation/control stress by the participant when they feel anxious / go to 'another place' in their minds to try and calm down.</li></ol>	<p>3 3 x (AO2)</p>	<p>Do not accept single word answers.</p>
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