



Mark Scheme (Final)

February 2020

Pearson BTEC Level 1/Level 2 Tech Award-
Sport, Activity and Fitness

Component 2: The Principles of Training,
Nutrition and Psychology for Sport and Activity
(21217L)

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Component 2: The Principles of Training, Nutrition and Psychology for Sport and Activity

General marking guidance

- All learners must receive the same treatment. Examiners must mark the first learner in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Learners must be rewarded for what they have shown they can do rather than be penalised for omissions.
- Examiners should mark according to the mark scheme, not according to their perception of where the grade boundaries may lie.
- All marks on the mark scheme should be used appropriately.
- All marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if a learner's response is not worthy of credit, according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a learner's response, the team leader must be consulted.
- Crossed-out work should be marked UNLESS the learner has replaced it with an alternative response.

Specific marking guidance

- The marking grids have been designed to assess learners' work holistically. Rows in the grids identify the assessment focus/outcome being targeted. When using a marking grid, the 'best fit' approach should be used.
- Examiners should first make a holistic judgement on which band most closely matches the learner's response and place it within that band. Learners will be placed in the band that best describes their answer.
- The mark awarded within the band will be decided based on the quality of the answer, in response to the assessment focus/outcome, and will be modified according to how securely all bullet points are displayed at that band.
- Marks will be awarded towards the top or bottom of that band, depending on how they have evidenced each of the descriptor bullet points.

Question number	Answer	Mark
1(a)	Award 1 mark for: <ul style="list-style-type: none"> • Average (1) 	(1)

Question number	Answer	Mark
1(b)	Award 1 mark for: <ul style="list-style-type: none"> • Power (1) 	(1)

Question number	Answer	Mark
2(a) & (b)	<p>Award 1 mark for naming each method of training and 1 mark for describing each method, up to a maximum of 2 marks per method of training.</p> <ul style="list-style-type: none"> • Continuous training (1) working at low to moderate intensity/for 30 minutes or more / without breaks (1). • Interval training (1) using sets of hard work with periods of rest / periods of higher intensity work, broken up by periods of lower intensity work (1). • Fartlek training (1) working at varied intensity by using changes of terrain / incline / resistance / speed (1). <p>Accept any other appropriate answer.</p>	(4)

Question number	Answer	Mark
2(c)	Award 1 mark for explaining why Harry lacks self-confidence.	
	<ul style="list-style-type: none"> • Harry does not believe that a desired behaviour can be performed (1). 	
	Accept any other appropriate answer.	

(1)

Question number	Answer	Mark
2(d)	Award 1 mark for the identification of a method of extrinsic motivation, and 1 mark for an expansion linked to self-confidence. <ul style="list-style-type: none"> • The instructor giving Harry positive reinforcement / rewards (1) will mean Harry <u>experiences / feels</u> success or achievement (1). Accept any other appropriate answer.	

(2)

Question number	Answer	Mark
2(e)	<p>Award 1 mark for giving a reason why each benefit will have a positive effect on training, up to a maximum of 1 mark per benefit.</p> <ul style="list-style-type: none"> • A positive attitude will lead to increased participation /attendance at training sessions / improved <u>intrinsic</u> motivation (1). • Increased effort will lead to higher intensity of training / greater adaptations (1) <p>Accept any other appropriate answer.</p>	(2)

Question number	Answer	Mark
3(a)	<p>Award 1 mark for correct working out, 2 marks for correct answer, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • $200 \times 50\%$ / 200×0.5 / $200 \div 2$ (1), so HR for warm up = 100 bpm (1) 	(2)

Question number	Answer	Mark
3(b)	<p>Award 1 mark for correctly stating a way of measuring heart rate, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Radial pulse (1) • Carotid pulse (1) • Heart rate monitor (1) • Smartwatch (1) • App (1) <p>Accept any other appropriate answer.</p>	(2)

Question number	Answer	Mark
3(c)	<p>Award 1 mark for naming the correct type of anxiety.</p> <ul style="list-style-type: none"> • State anxiety (1). <p>Accept any other appropriate answer.</p>	(1)

Question number	Answer	Mark
3(d)	<p>Award 1 mark for stating an appropriate somatic effect, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Butterflies in the stomach (1) • Muscle tension (1) • Increased heart rate (1) • Increased sweating (1) <p>Accept any other appropriate answer.</p>	(2)

Question number	Answer	Mark
3(e)	<p>Award 1 mark for the explanation of how an induction will control anxiety and 1 mark for a linked response, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • An induction will allow Mikey to familiarise himself with the facilities / know how to use the equipment (1) so he will feel more comfortable about making a mistake (1). • An induction will familiarise Mikey with the staff (1) so he will know who to ask for help (1). <p>Accept any other appropriate answer.</p>	(2)

Question number	Answer	Mark
3(f)	<p>Award 1 mark for stating an appropriate method to control anxiety.</p> <ul style="list-style-type: none"> • Use of music (1) • Work at correct ability level (1) <p>Accept any other appropriate answer.</p>	(1)

Question number	Answer	Mark
4(a)	<p>Award 1 mark for identifying the correct FITT principle and 1 mark for a description of its use, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • The coach changed the frequency (1) by adding an extra session per week (1). <p>Accept any other appropriate answer.</p>	(2)

Question number	Answer	Mark
4(b)	<p>Award 1 mark for stating an appropriate change to session content, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Increase number of sprints (1) • Increase distance of sprints (1) • Decrease rest periods (1) <p>Accept any other appropriate answer.</p>	(2)

Question number	Answer	Mark
4(c)(i)	<p>Award 1 mark for naming a method of training for speed, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Speed, agility, quickness (SAQ) (1) • Interval training (1) • Sport specific speed training (1) <p>Accept any other appropriate answer.</p>	(2)

Question number	Answer	Mark
4(c)(ii)	<p>Award 1 mark for stating a benefit for the performer, up to a maximum of 1 mark.</p> <ul style="list-style-type: none"> • Prevents tedium / boredom • Increases motivation • Increases fun / enjoyment <p>Accept any other appropriate answer.</p>	(1)

Question number	Answer	Mark
4(d)	<p>Award 1 mark for identifying why a cool down is important after speed training and 1 mark for a linked expansion, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • To gradually decrease heart rate (1) as it will have been a high intensity session (1) • For removal of waste products / lactic acid (1) to reduce muscle soreness (1). <p>Accept any other appropriate answer.</p>	(2)

Question number	Answer	Mark
5(a)	<p>Award 1 mark for naming an appropriate food, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Oranges (1) • Apples (1) • Lemons (1) • Broccoli (1) • Cauliflower (1) • Spinach (1) • Beans (1) <p>Accept any other appropriate answers.</p>	(2)

Question number	Answer	Mark
5(b)	<p>Award 1 mark for identification of the main function of vitamin C and 1 mark for related expansions, up to a maximum of 3 marks.</p> <p>Vitamin C maintains an effective immune system (1) to prevent illness / to stay healthy (1) able to attend more training sessions (1).</p> <p>Accept any other appropriate answer.</p>	(3)

Question number	Answer	Mark
5(c)	<p>Award 1 mark for naming an appropriate food source.</p> <ul style="list-style-type: none"> • Wholegrain foods (1) • Wholegrain cereals (1) • Wholewheat pasta (1) • Wholegrain bread (1) • Oats (1) • Vegetables (1) <p>Accept any other appropriate answer.</p>	(1)

Question number	Answer	Mark
5(d)(i)	<p>Award 1 mark for giving a reason why fibre consumption might increase before the event, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • To empty the bowel (1) • To aid digestion (1) <p>Accept any other appropriate answer.</p>	(2)
Question number	Answer	Mark
5(d)(ii)	<p>Award 1 mark for explaining why fibre consumption will help with efficient completion the race.</p> <ul style="list-style-type: none"> • (Emptying the bowel) will mean Casey will not have to stop to do so during the race (1). • (To aid digestion) so Casey can absorb important nutrients needed for the race (1). <p>Accept any other appropriate answer.</p>	(1)

Question number	Answer	Mark
6(a) Clerical	<p>Award 1 mark for:</p> <ul style="list-style-type: none"> • Energy (1). 	(1)

Question number	Answer	Mark
6(b) Clerical	<p>Award 1 mark for:</p> <ul style="list-style-type: none"> • 2000 kcal (1). 	(1)

Question number	Answer	Mark
6(c) Expert	<p>Award 1 mark for identification of an appropriate advantage, and 1 mark for an expansion, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • The drink will provide energy (1) and is quickly released (1) • The drink will provide simple carbohydrates (1) that are easily digested and absorbed (1) • The drink will maintain hydration /fluid levels (1) and replace lost salts / electrolytes (1) <p>Accept any other appropriate answer.</p>	(2)

Question number	Answer	Mark
6(d) Expert	<p>Award 1 mark for the identification of a benefit of improved bone health, and 1 further mark for a linked expansion, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Maddie's bones will be stronger (1) so are able to absorb more impact / force (1) • Maddie's bones will be able to absorb more impact / force (1) preventing a break or fracture/ lowering risk of injury from a tackle (1) <p>Accept any other appropriate answer.</p>	(2)

Question number	Indicative content	Mark
7	<p>Responses may include the following.</p> <p><u>Carbohydrates</u></p> <p>Sources and Intake</p> <ul style="list-style-type: none"> • Recommended 50-60% of daily intake • Sources – pasta, rice, potatoes (complex), fruit, sweets, (energy gels (simple) <p>Function</p> <ul style="list-style-type: none"> • Primary source of energy. • Simple carbohydrates provide quick release energy source. • Complex carbohydrates provide slower release, longer lasting energy source. <p>Timing and link to marathon training</p> <ul style="list-style-type: none"> • Ali should have a high carbohydrate intake. • Carbohydrate loading. • Complex carbohydrates should be consumed in the days/ night before a long training run to provide energy to maintain running pace. • Simple carbohydrates should be consumed immediately before or during training runs to maximise glucose availability. <p><u>Protein</u></p> <p><u>Sources and Intake</u></p> <ul style="list-style-type: none"> • Recommended 12-15% of daily intake • Sources – lean meats, fish, beans, nuts, eggs, seeds 	(9)

	<p>Function</p> <ul style="list-style-type: none"> • Allow repair and growth of muscle and other body structures. • Made up of amino acids (essential and non-essential) • Building blocks that make up the structures of our body. <p>Timing and link to marathon training</p> <ul style="list-style-type: none"> • Ali should increase protein consumption after training runs. • damaged during training runs • During periods of rest and recovery / between training runs that repair / growth/ adaptation will take place. • Helps to avoid injury / maintain and improve ability to complete training runs. <p><u>Fat</u></p> <p>Sources and Intake</p> <ul style="list-style-type: none"> • Recommended 30% of daily intake • Sources – animal fats and dairy (saturated) <p>pumpkin seeds, walnuts, oily fish (unsaturated fats)</p> <p>Function</p> <ul style="list-style-type: none"> • Unsaturated fats are a <u>secondary</u> source of energy • Saturated fats increase cholesterol / link to CHD <p>Timing and link to marathon training</p> <ul style="list-style-type: none"> • Ali should reduce intake of saturated fats • To reduce overall body weight / have less body weight to carry on runs. • Unsaturated fats provide energy when carbohydrate store are depleted on long runs. 	
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Level	Mark	Descriptor
Level 0	0	No rewardable material.
Level 1	1-3	<ul style="list-style-type: none"> • Demonstrates isolated elements of knowledge and understanding. • Breaks the situation down into component parts and a few of the points made will be relevant to the context in the question. • Limited analysis which contains generic assertions rather than interrelationships or linkages.
Level 2	4-6	<ul style="list-style-type: none"> • Demonstrates some accurate knowledge and understanding. • Breaks the situation down into component parts and some of the points made will be relevant to the context in the question. • Displays a partially developed analysis which considers some interrelationships or linkages but not always sustained.
Level 3	7-9	<ul style="list-style-type: none"> • Demonstrates mostly accurate knowledge and understanding. • Breaks the situation down into component parts and most of the points made will be relevant to the context in the question. • Displays a developed and logical analysis which clearly considers interrelationships or linkages in a sustained manner.

Question number	Answer	Mark
8(a)	<p>Award 1 mark for giving a correct definition of motivation.</p> <ul style="list-style-type: none"> • The drive to achieve success • Internal mechanisms / external stimuli that arouse and direct behaviour <p>Accept any other appropriate answer.</p>	(1)

Question number	Answer	Mark
8(b)	<p>Award 1 mark for identification of each correct type of motivation.</p> <ul style="list-style-type: none"> • Praise – Extrinsic • Enjoyment – Intrinsic • Winning a medal – Extrinsic • Sense of achievement - Intrinsic <p>Accept any other appropriate answer.</p>	(4)

Question number	Answer	Mark
8(c)	<p>Award 1 mark for identification of why fun will help Ashani in training, and 1 mark for a linked expansion of why this will improve her high jump performance, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Ashani will increase effort levels / be more engaged during sessions (1) improving the quality of her practice / developing better technique (1) • Ashani will attend more sessions / increase participation levels (1) so will increase opportunities to practice / will develop / adapt more quickly (1) <p>Accept any other appropriate answer.</p>	(2)

Question number	Indicative content	Mark
9	<p>Responses may include the following.</p> <p>Strength Training Methods</p> <ul style="list-style-type: none"> • Free weights • Use of barbells/ dumbbells • Targets specific muscle groups • Better for experienced performers • Increased risk of injury <ul style="list-style-type: none"> • Resistance machines • Use to complete a set or fixed exercise / targets specific muscle groups • Controls motion or technique / reduces risk of injury • Suitable for less experienced performer <ul style="list-style-type: none"> • Both methods require high weight and low repetitions to develop strength <p>Muscular Endurance Training Methods</p> <ul style="list-style-type: none"> • Circuit training • A series of stations • With a short break between each. • Using different exercises / works all muscle groups <ul style="list-style-type: none"> • Core stability training • Balancing/stretching/twisting movements • Placing core muscles under tension for extended periods • Developing control of core muscles <ul style="list-style-type: none"> • Both methods require work with low resistance and high repetitions 	(9)

	<p>/longer endurance to develop muscular endurance</p> <p>Application to Rugby</p> <p>Improved Strength</p> <ul style="list-style-type: none"> • Allows James to generate greater force in his muscles. • To make a tackle • To withstand force of being tackled / drive through a tackle • To push in ruck / maul / scrum • To lift players at a lineout • To grip ball and keep possession <p>Improved Muscular endurance</p> <ul style="list-style-type: none"> • Allows James to repeatedly contract muscles groups. • To maintain increased running pace /make repeated sprints during the game • Maintain effective physical contact throughout the game. • To repeatedly pass the ball. <p>Improved Core stability</p> <ul style="list-style-type: none"> • Provides foundation for other movements • Leads to more efficient execution of skills such as passing / kicking/ tackling • Provides strong foundation to protect from tackling impact /help prevent injury • Remain balanced when running with ball. 	
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Level 0	0	No rewardable material.
Level 1	1-3	<ul style="list-style-type: none"> • Demonstrates isolated elements of knowledge and understanding. • Breaks the situation down into component parts and a few of the points made will be relevant to the context in the question. • Limited analysis which contains generic assertions rather than interrelationships or linkages.
Level 2	4-6	<ul style="list-style-type: none"> • Demonstrates some accurate knowledge and understanding. • Breaks the situation down into component parts and some of the points made will be relevant to the context in the question. • Displays a partially developed analysis which considers some interrelationships or linkages but not always sustained.
Level 3	7-9	<ul style="list-style-type: none"> • Demonstrates mostly accurate knowledge and understanding. • Breaks the situation down into component parts and most of the points made will be relevant to the context in the question. • Displays a developed and logical analysis which clearly considers interrelationships or linkages in a sustained manner.

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Llywodraeth Cynulliad Cymru
Welsh Assembly Government



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