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**Pearson BTEC  
Level 1/Level 2  
Tech Award**

Centre Number

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Learner Registration Number

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**Monday 13 May 2019**

Morning (Time: 1 hour 30 minutes)

Paper Reference **21217L**

**Sport, Activity and Fitness**

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

**You must have:**  
Calculator

Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*

### Information

- The total mark for this paper is 70.
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*
- A calculator may be used.

### Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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**Answer all questions. Write your answers in the space provided.**

Sherina has been using a method of training called static stretching to improve her fitness.

1 (a) State the component of fitness Sherina is training to improve. (1)

(b) Name **one other** method of training Sherina could use to improve this component of fitness. (1)

**(Total for Question 1 = 2 marks)**

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The members of a rowing club have completed two fitness tests.

**Table 1** shows some of their results for the one-minute sit-up test and hand grip dynamometer test.

| Name      | Gender | One-minute sit-up test result (rpm) | Hand grip dynamometer test result (kg) |
|-----------|--------|-------------------------------------|--|
| Chloe     | Female | 19                                  | 29                                     |
| Ibrahim   | Male   | 27                                  | 44                                     |
| Francesca | Female | 32                                  | 35                                     |

**Table 1**

2 (a) Identify, using **Table 1**, the participant with the highest score for strength.

(1)

**Table 2** shows normative data for the hand grip dynamometer test.

|        | Category  |       |         |       |      |
|--------|-----------|-------|---------|-------|------|
| Gender | Excellent | Good  | Average | Fair  | Poor |
| Male   | >56       | 51–56 | 45–50   | 39–44 | <39  |
| Female | >36       | 31–36 | 25–30   | 19–24 | <19  |

**Table 2**

(b) Identify, using **Table 1 and Table 2**, the category Francesca is in for the hand grip dynamometer test.

(1)



Francesca's result for the one-minute sit-up test is in the excellent category.

(c) (i) Name the component of fitness tested by the one-minute sit-up test.

Component of fitness (1)

(ii) Give **one** reason why this component of fitness is important for rowing performance.

Reason (1)

Chloe is a beginner who has only just started rowing. The club coach has given her a training partner of a similar ability to work with.

(d) Explain why working with a training partner of a similar ability might increase Chloe's self-confidence as a beginner. (2)

(e) State **one other** method a coach could use to increase Chloe's self-confidence. (1)

(f) Explain why the benefits of increased self-confidence will lead to increased participation levels. (2)

(Total for Question 2 = 9 marks)

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**Figure 1**

Source: © art3/Shutterstock

Jake is a javelin thrower. His coach has told him that he needs to improve his speed.

**3** (a) Name **two** methods of training Jake could use to improve his speed. (2)

1 .....

2 .....

(b) Describe how improved speed will benefit Jake's performance in the javelin. (2)

.....

.....

Jake is a committed athlete and is intrinsically motivated to improve.

(c) Give a definition of intrinsic motivation. (1)

.....

Motivation can be increased through extrinsic and intrinsic rewards.

A feeling of satisfaction would be an example of an **intrinsic reward**.

(d) Give **one other** example of an intrinsic reward. (1)

.....



Extrinsic rewards can be classified as tangible and intangible.

(e) Give **one** example of an extrinsic **intangible** reward.

(1)

Increased extrinsic and intrinsic rewards are one benefit of increased motivation.

(f) State **two other** benefits of increased motivation.

(2)

1

2

(Total for Question 3 = 9 marks)

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Wayne has been told by his doctor that he is overweight. He has asked a fitness instructor to design a training programme with the aim of burning off some excess body fat.

- 4 (a) State **two** pieces of Wayne's personal information the fitness instructor needs to aid the design of a training programme. (2)

1 .....

2 .....

At the start of every session, the fitness instructor uses a warm-up to prepare Wayne for exercise.

- (b) State **two** ways a warm-up prepares the body for exercise. (2)

1 .....

2 .....

The training programme includes sessions that use the method of continuous training.

- (c) Explain why the duration and intensity of continuous training will make sure that Wayne is burning fat.

Duration (2)

.....

.....

Intensity (2)

.....

.....

**(Total for Question 4 = 8 marks)**

.....

.....



Jackson is training for a boxing match in six weeks. His coach has put him on a high protein diet as part of his training.

5 (a) Name **one** food source with a high percentage of protein. (1)

Proteins are structures made up of long chains of amino acids. There are two types of amino acid.

(b) Name **one** type of amino acid. (1)

As part of his boxing training programme, Jackson lifts heavy weights regularly.

(c) Explain how **two** functions of protein will benefit Jackson as he trains for his boxing match. (4)

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2 .....

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Protein is a macronutrient.

(d) Identify the **main** macronutrient provided by the food source in each of the three pictures.



1 ..... (1)

Bread



2 ..... (1)

Butter



3 ..... (1)

Fruit

Source: © Ruslan Ivantsov/Shutterstock

Source: © bigacis/Shutterstock

Source: © Africa Studio/Shutterstock

**(Total for Question 5 = 9 marks)**



Sharon is a cricket player. She is monitoring her diet to make sure she is eating all the micronutrients she needs.

6 (a) Name **one** food source that will provide Sharon with vitamin D. (1)

(b) State the function of vitamin D. (1)

Vitamin A is another important micronutrient.

(c) Explain why the function of vitamin A benefits Sharon's cricket performance. (2)

On the morning of a game Sharon wakes up late and feels tired.

She decides to use a legal supplement to make her feel more energised.

(d) Name **one** legal supplement Sharon could **drink** to make her feel more energised. (1)

(e) State **two** disadvantages of using these types of legal supplement. (2)

1 .....

2 .....

(Total for Question 6 = 7 marks)

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Dai has joined a basketball club.

During training sessions he feels relaxed and enjoys taking part.

However, the night before a match he finds it difficult to sleep because he feels worried about participating in the match.

7 Analyse the type of anxiety Dai is experiencing **and** how appropriate methods to control this could increase his future participation.

(9)

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**(Total for Question 7 = 9 marks)**



Sandra keeps fit by cycling to work.

**Table 3** shows Sandra's diet on a typical day.

| Breakfast                              | Lunch  | Dinner   | Fluid intake     |
|--|--|--|------------------|
| Nothing                                | 2 ham sandwiches<br>Bag of crisps<br>Chocolate bar | Chicken and mushroom pie<br>Boiled potatoes<br>Broad beans | 1 litre of water |
| Total daily energy intake = 1500 kcals |  | Percentage of total daily energy intake                    |                  |
|  |  | Carbohydrates 50%  |                  |
|  |  | Fats 40%   |                  |
|  |  | Protein 10%  |                  |

**Table 3**

Sandra's total daily energy intake of 1500 kcals is made up of carbohydrates, fats and protein.

- 8** (a) Calculate, using **Table 3**, the total amount of carbohydrates that Sandra has consumed in kcals.

(2)

Calculation

Answer ..... kcals

One area for improvement in Sandra's diet is that her fluid consumption is below the recommended daily intake. This could result in dehydration.

- (b) Give the meaning of the term dehydration.

(1)



(c) Explain the effect of dehydration on Sandra's body **and** how this will impact on her ability to keep cycling.

(2)

.....

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(d) Identify, using **Table 3, three other** areas that would improve Sandra's diet.

(3)

1 .....

2 .....

3 .....

**(Total for Question 8 = 8 marks)**

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(Total for Question 9 = 9 marks)

**TOTAL FOR PAPER = 70 MARKS**

