3.3 Principles of Training, FITT and Target Heart Rate Zones: 10-minute Pack

AQA 8582 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Which principle of training states that fitness gains will be lost if training stops or is significantly reduced?

- ☐ A) Specificity
- ☐ B) Progressive overload
- ☐ C) Reversibility
- ☐ D) Variance

(Total for Question 1 is 1 mark)

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2 After 4 weeks of his programme, Sam finds his jogging routine boring and his motivation to train is dropping.

(a) Name the training principle most relevant to this problem. **(1)**

(b) Suggest one change Sam could make to his programme to address this, without changing his overall training goal of improving aerobic endurance. **(2)**

(Total for Question 2 is 3 marks)

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3 Explain why an elite athlete might deliberately train at a lower percentage of their maximum heart rate (e.g. 60 to 70 per cent) during a recovery session, compared with a harder threshold session at 80 to 90 per cent.

(Total for Question 3 is 2 marks)

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4 A swimmer wants to improve their speed over a short sprint distance in the pool.

(a) Suggest how the swimmer could change the Intensity of their training to help achieve this goal. **(2)**

(b) Suggest how the swimmer could change the Type of their training to help achieve this goal. **(2)**

(Total for Question 4 is 4 marks)

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5 Explain why applying overload too quickly could increase Sam's risk of injury, and suggest how the principle of progressive overload helps to reduce this risk.

(Total for Question 5 is 3 marks)

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Mark scheme · 3.3 Principles of Training, FITT and Target Heart Rate Zones: 10-minute Pack

Question 1

C (reversibility) **B1**

Answer: C (reversibility)

Question 2

(a) variance (tedium) **B1**

(a) Answer: Variance (tedium).

(b) vary the type of aerobic training (Type in FITT), e.g. swap some jogs for cycling, swimming or a structured interval session, or train with a partner, or vary the route, oe **B1**

(b) while keeping the same overall focus on aerobic endurance (rather than switching to an unrelated fitness component), oe **B1**

(b) Answer: Sam could vary the Type of aerobic training, for example swapping some jogs for cycling, swimming or a structured interval session, while keeping the overall focus on aerobic endurance.

Question 3

a low-intensity recovery session (around 60 to 70 per cent of MHR) keeps the body working aerobically, promoting blood flow and recovery, without adding significant extra fatigue or stress to the muscles, oe **B1**

this allows the athlete to recover from a previous hard session and be ready to train intensely again soon, whereas training every session at 80 to 90 per cent would risk overtraining/injury and prevent proper recovery/adaptation, oe **B1**

Answer: A low-intensity recovery session keeps the body working aerobically and promotes blood flow without adding significant fatigue, allowing the athlete to recover properly; training at 80 to 90 per cent every session instead would risk overtraining and prevent the recovery needed for the body to adapt.

Question 4

(a) increase the intensity/effort of some sets, e.g. swimming shorter repeats at close to maximum effort/speed, oe **B1**

(a) with longer recovery between repeats so that each effort can be performed at a high intensity, oe **B1**

(a) Answer: The swimmer could increase intensity by swimming short repeats at close to maximum effort, with enough recovery between repeats to keep each effort high-intensity.

(b) change the type of training towards short, high-intensity interval sets or resistance/power-based training, rather than long steady-distance swimming, oe **B1**

(b) because this type of training targets speed and power more directly than long, steady aerobic swimming does, oe **B1**

(b) Answer: The swimmer could switch some sessions to short, high-intensity interval sets or power-based training, rather than long, steady-distance swimming, because this type of training more directly targets speed and power.

Question 5

increasing training demands too quickly does not give the body's muscles, tendons or joints enough time to adapt to the new level of stress, oe **B1**

this can lead to overuse injuries (e.g. strains or joint problems) because the tissues are not yet strong enough to cope, oe **B1**

progressive overload reduces this risk by increasing demands gradually, in small steps, giving the body time to adapt safely between increases, oe **B1**

Answer: Increasing demands too quickly does not give muscles, tendons and joints enough time to adapt, which can cause overuse injuries; progressive overload reduces this risk by increasing demands gradually, in small steps, so the body has time to adapt safely between each increase.

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