3.4 Training Methods and Their Suitability: Test Pack

AQA 8582 · Calculator allowed · about 15 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Which training method would most effectively improve a marathon runner's aerobic (cardiovascular) endurance?

- [ ] A) Plyometric training
- [ ] B) Continuous training
- [ ] C) Weight training with heavy loads and few repetitions
- [ ] D) Static stretching

(Total for Question 1 is 1 mark)

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2 Name the training method that, when using a HIGH load and LOW number of repetitions, is most effective for improving maximal muscular strength.

(Total for Question 2 is 1 mark)

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3 Training loads in weight training are often set as a percentage of an athlete's one-repetition maximum (1RM): the maximum weight they can lift correctly for a single repetition. Training weight is calculated as: training weight = 1RM x target percentage.

(a) State what is meant by an athlete's one-repetition maximum (1RM). **(1)**

(b) An athlete has a 1RM back squat of 90 kg. Using the formula given, calculate 70 per cent of this athlete's 1RM. **(2)**

(c) State whether a training programme using a HIGH percentage of 1RM (e.g. 85 to 100 per cent) with LOW repetitions is more likely to develop maximal strength or muscular endurance, and justify your answer. **(2)**

(Total for Question 3 is 5 marks)

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4 A shot putter wants to improve their explosive power for the throw and their maximal strength for the initial push, before their competition season.

(a) State one training method suitable for improving the shot putter's power. **(1)**

(b) State one training method suitable for improving the shot putter's maximal strength. **(1)**

(c) Explain why continuous training would be an unsuitable PRIMARY training method for this shot putter. **(3)**

(Total for Question 4 is 5 marks)

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5 State one reason why flexibility training (e.g. static stretching) is often included as part of a warm-up or cool-down, rather than being used as a stand-alone main training method.

(Total for Question 5 is 2 marks)

6 Explain why fartlek training can improve both aerobic endurance and some anaerobic fitness/speed within the same session.

(Total for Question 6 is 2 marks)

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Mark scheme · 3.4 Training Methods and Their Suitability: Test Pack

Question 1

B (continuous training) **B1**

Answer: B (continuous training)

Question 2

weight (resistance) training **B1**

Answer: Weight (resistance) training.

Question 3

(a) the maximum weight an athlete can lift correctly for a single repetition, oe **B1**

(a) Answer: The maximum weight an athlete can lift correctly for a single repetition.

(b) 0.7 x 90, oe **M1**

(b) 63 kg **A1**

(b) Answer: 63 kg.

(c) maximal strength, oe **B1**

(c) because lifting very close to the maximum weight the muscle can move forces it to produce close to its greatest possible force, which is the adaptation that improves strength rather than the ability to repeat contractions, oe **B1**

(c) Answer: Maximal strength, because lifting very close to the athlete's 1RM forces the muscle to produce close to its greatest possible force in each repetition, which is the adaptation that develops strength rather than the ability to repeat contractions many times.

Question 4

(a) plyometric training **B1**

(a) Answer: Plyometric training.

(b) weight (resistance) training, using a high load and low repetitions **B1**

(b) Answer: Weight training, using a high load and low repetitions.

(c) continuous training mainly develops aerobic (cardiovascular) endurance, oe **B1**

(c) a shot put is a single, short, explosive maximal effort lasting only a few seconds, so it does not rely on sustained aerobic energy supply, oe **B1**

(c) so continuous training would not be specific to the demands of the event, and would not develop the strength or power that actually determine shot put performance, oe **B1**

(c) Answer: Continuous training mainly develops aerobic endurance, but a shot put is a single, short, explosive effort lasting only a few seconds, so it does not rely on sustained aerobic energy supply. Continuous training would therefore not be specific to the event's demands and would not develop the strength or power that actually determine performance.

Question 5

flexibility training's main benefit (increased range of motion at joints) mainly supports the safe/effective performance of other training or activity, oe **B1**

rather than directly improving a performance component such as strength, power or endurance on its own, so it is usually combined with, rather than replacing, other training methods, oe **B1**

Answer: Flexibility training's main benefit, an increased range of motion at the joints, mainly supports the safe and effective performance of other training or activity, rather than directly improving a performance component such as strength, power or endurance on its own. It is therefore usually combined with other training methods rather than used as a stand-alone main method.

Question 6

the session is continuous overall, which places a sustained demand on the aerobic system throughout, oe **B1**

but it also includes faster bursts of pace, which place a short, higher-intensity demand on the anaerobic system and speed, so both systems are trained within one session, oe **B1**

Answer: The session is continuous overall, which places a sustained demand on the aerobic system throughout, but it also includes faster bursts of pace, which place a short, higher-intensity demand on the anaerobic system and speed, so both systems are trained within the same session.

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