Friday 2 June 2017

Question book

Physical Education

Time allowed

Perusal time — 10 minutes
Writing time — 120 minutes

General instructions

- Fill in the multiple-choice answer bubbles using 2B pencil.
- Write Section B responses using black or blue pen.
- Answer all questions in the response book.

Section A

Ten multiple-choice questions

Section B

- Two short-response questions
- One extended written response question

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Section A

Instructions

- Do not circle your answers in this book.
- Answer all questions in the response book.

QUESTION 1

An athlete takes five seconds to sprint 30 metres at maximum intensity. Which system is contributing the most during this sprint?

(A) Aerobic

(B) Muscular

(C) Creatine phosphate (ATP-PC)

(D) Lactic acid (anaerobic glycolysis)

QUESTION 2

Which of the following is a health-related fitness component?

(A) Agility

(B) Coordination

(C) Aerobic capacity

(D) Anaerobic capacity

QUESTION 3

An athlete repeats three high-intensity sprints of 200 metres with short, active rest periods between each sprint. Which system is contributing the most during this activity?

(A) Agility

(B) Aerobic

(C) Creatine phosphate (ATP-PC)

(D) Lactic acid (anaerobic glycolysis)

QUESTION 4

Which of the following describes the order (from first to last) in which food sources are processed by the body to produce adenosine triphosphate (ATP)?

(A) Carbohydrates, proteins, fats

(B) Carbohydrates, fats, proteins

(C) Fats, carbohydrates, proteins

(D) Proteins, carbohydrates, fats

QUESTION 5

The intensity of a training session can be measured by monitoring an athlete's heart rate.
The target heart rate for an endurance training session should be

(A) above 90% of the athlete's maximum heart rate.

(B) above 80% of the athlete's maximum heart rate.

(C) between 70% and 85% of the athlete's maximum heart rate.

(D) approximately 220 beats per minute minus the athlete's age.

QUESTION 6

The 2.4 kilometre run test requires an athlete to run the full distance in one continuous effort. Which fitness components are measured in this test?

(A) Aerobic capacity and speed

(B) Aerobic capacity and local muscular endurance

(C) Anaerobic capacity and local muscular strength

(D) Anaerobic capacity and local muscular endurance

QUESTION 7

Which group of factors has the most influence on the specificity of an interval training session?

(A) Rest duration, work duration, frequency, intensity

(B) Rest duration, frequency, variety, number of repetitions

(C) Work duration, frequency, intensity, number of repetitions

(D) Rest duration, work duration, intensity, number of repetitions

QUESTION 8

The creatine phosphate (ATP-PC) energy system is the greatest contributor to the production of adenosine triphosphate (ATP) when high-intensity exercise duration is

(A) 10 seconds or less.

(B) 30 seconds or less.

(C) 85 seconds or more.

(D) between 35 seconds and 80 seconds.

QUESTION 9

Which of the following best describes the percentage contribution of each energy system for an athlete running continuously for three minutes?

(A) 10% creatine phosphate (ATP-PC), 30% lactic acid (anaerobic glycolysis), 60% aerobic

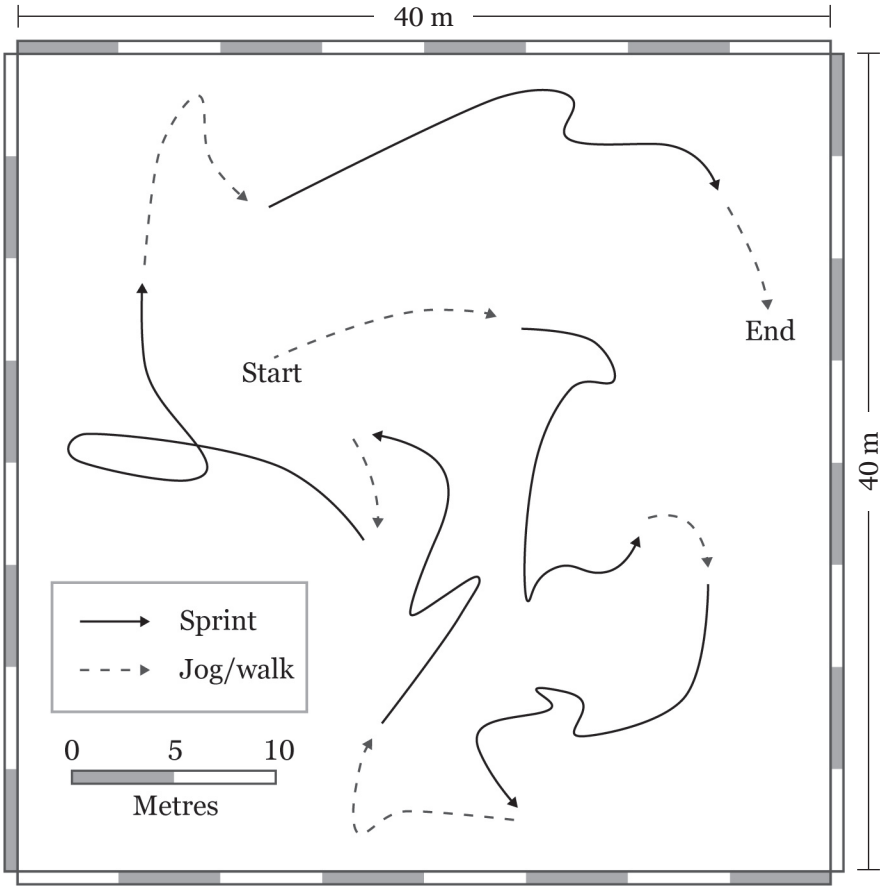
(B) 30% creatine phosphate (ATP-PC), 60% lactic acid (anaerobic glycolysis), 10% aerobic

(C) 60% creatine phosphate (ATP-PC), 30% lactic acid (anaerobic glycolysis), 10% aerobic

(D) 60% creatine phosphate (ATP-PC), 10% lactic acid (anaerobic glycolysis), 30% aerobic

QUESTION 10

The diagram below shows a player's movements during two minutes of a modified game on a playing area measuring 40 metres long by 40 metres wide.



Which circuit training session below best targets the player's requirements?

(A)

Activity	Duration
Sit-ups	1 minute
Run	1 kilometre
Push-ups	1 minute
Agility pole sprints	5 × 20 metres

(B)

Activity	Duration
Calf raises	1 minute
Sprints	10 × 20 metres
Squats	1 minute
Agility pole sprints	5 × 20 metres

(C)

Activity	Duration
Calf raises	1 minute
Sprints	10 × 20 metres
Bicep curls	1 minute
Hill sprints	5 × 10 metres

(D)

Activity	Duration
Hill sprints	5 × 10 metres
Bicep curls	1 minute
Squats	1 minute
Push-ups	1 minute

Section B

Instructions

Any planning required to complete the questions in Section B may be completed on the planning paper supplied. This planning paper will not be marked.

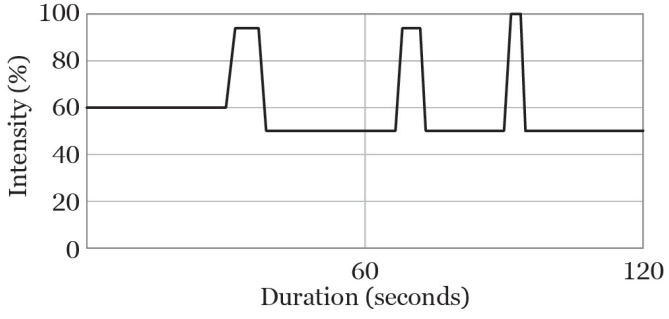
QUESTIONS 11–12

The tables below are movement summaries showing the performances of two different players (Player 1 and Player 2) during a two-minute modified game. The information in each table is represented graphically in an intensity graph.

Player 1 movement summary

Movement	Duration (seconds)	Distance (metres)	Intensity (%)
1	32	124	60
2	7	54	95
3	27	102	50
4	6	46	95
5	19	71	50
6	4	34	100
7	25	87	50

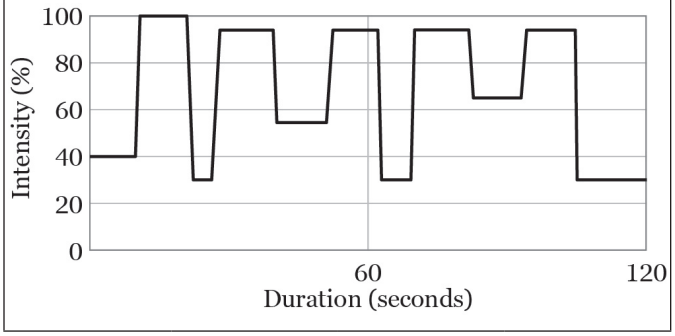
Player 1 intensity graph



Player 2 movement summary

Movement	Duration (seconds)	Distance (metres)	Intensity (%)
1	13	20	40
2	11	86	100
3	5	6	30
4	12	80	95
5	12	26	55
6	10	72	95
7	8	8	30
8	13	85	95
9	10	37	65
10	12	78	95
11	14	15	30

Player 2 intensity graph



QUESTION 11 (150 words)

Recommend an appropriate training method for Player 1. Justify your recommendation by referring to the duration and intensity of this player's movements.

QUESTION 12 (150 words)

Compare and contrast Player 1 and Player 2 energy system contributions during the two-minute modified game.

QUESTION 13 (400 words)

The circled standards in the table below show an athlete's results for five fitness tests.

Fitness test	Fitness component	Standards				
		Very good	Good	Average	Below average	Poor
Multistage fitness beep test (VO_2 max mL/kg/min)	**Aerobic capacity**	> 50.2	40.9 – 50.1	31.2 – 40.8	26.8 – 31.1	< 26.7
30-second agility test (number of laps)	**Agility**	> 12.0	10.0 – 11.0	8.0 – 9.0	7.0	< 6.0
40-metre sprint test (seconds)	**Speed**	< 5.2	5.3 – 5.5	5.6 – 5.8	5.9 – 6.2	> 6.3
400-metre run test (seconds)	**Anaerobic capacity**	< 64.9	65.0 – 69.9	70.0 – 75.9	76.0 – 82.0	> 82.1
Vertical jump test (centimetres)	**Muscular power**	> 63.0	58.0 – 62.9	53.0 – 57.9	46.0 – 52.9	< 45.9

Evaluate the athlete's suitability to perform in the physical activity that has been the focus of your study in Term 2.

Justify your response by referring to:

- energy systems and fitness components
- the principles of specificity, duration and intensity.

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