

STUDENT NUMBER

Figures

Words

Letter

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PHYSICAL EDUCATION

Units 3 & 4 –Written examination

Reading time: 15 minutes

Writing time: 2 hours

QUESTION AND ANSWER BOOK

Structure of book

<i>Section</i>	<i>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
A	15	15	15
B	14	14	105
			Total 120

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is permitted in this examination.

Materials supplied

- Question and answer book of 25 pages.

Instructions

- Print your name in the space provided on the top of this page.
- All written responses must be in English.

Students are NOT permitted to bring mobile phones and/or any other electronic devices into the examination room.

SECTION A – Multiple-choice questions

Instructions for Section A

Answer **all** questions.

Choose the response that is **correct** or that **best answers** the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks are **not** deducted for incorrect answers.

If more than 1 answer is completed for any question, no mark will be given.

Question 1

Which of the following options shows the correct order of importance of the energy systems during a 400m sprint?

- A. Anaerobic glycolysis, ATP-CP, Aerobic lipolysis
- B. Anaerobic glycolysis, ATP-CP, Aerobic glycolysis
- C. ATP-CP, Anaerobic glycolysis, Aerobic glycolysis
- D. ATP-CP, Aerobic glycolysis, Anaerobic glycolysis

Question 2

A perceived benefit of stimulants is that they:

- A. reduce fatigue
- B. decrease alertness
- C. cause insomnia
- D. reduce heart rate

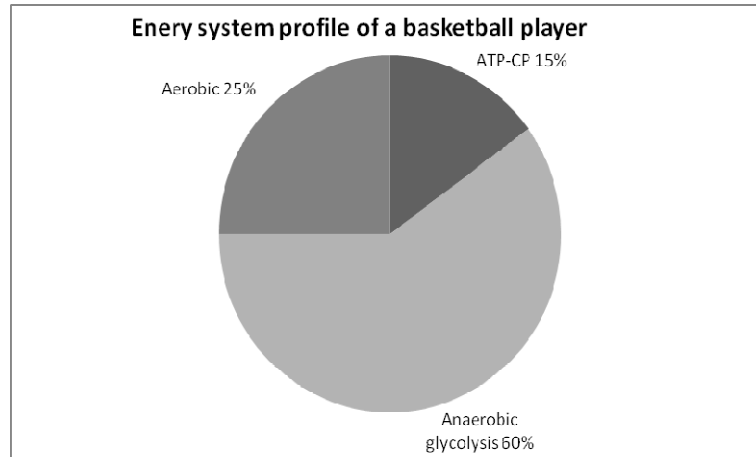
Question 3

The work periods and rest periods for a games analysis were calculated to have a work: ratio of 1:7. The dominant system used during the work periods would be:

- A. ATP
- B. ATP-CP
- C. Anaerobic glycolysis
- D. Aerobic glycolysis

SECTION A - continued

Question 4



Using the data provided which of the following training methods would be the most appropriate for basketball?

- A. Long interval
- B. Continuous
- C. Fartlek
- D. Plyometrics

Question 5

Identify which set of adaptations are most likely to be those of an aerobically trained athlete.

- A. increased oxidation of fat, decreased size and number of mitochondria
- B. decreased oxidation of fat, increased size and number of mitochondria
- C. increased alveoli-capillary surface area and oxidation of fat
- D. increased glycogen and CP stores and alveoli-capillary surface area

Question 6

If you were completing a resistance training program with the following protocol, 2 sets of 15 repetitions with a weight 50-60% of your one repetition maximum. Which fitness component would you develop most effectively?

- A. Muscular power
- B. Local muscular endurance
- C. Muscular strength
- D. Muscle hypertrophy

Question 7

Which of the following statements regarding the ATP-CP system is correct?

- A. Produces 0.7 ATP per PC molecule
- B. Has a slow rate of ATP production
- C. Has a high yield of ATP
- D. Involves complex chemical reactions

**SECTION A – continued
TURN OVER**

Question 8

Ice is often used following games of contact sport or intense training sessions. Why?

- A. Decreases blood flow
- B. Minimises bruising
- C. Reduces swelling
- D. All of above

Question 9

Which of the following is the most appropriate progressive overload for a weight training program consisting of 4 sets of 3 repetitions?

- A. 5 sets of 3 reps
- B. 5 sets of 4 reps
- C. 4 sets of 4 reps
- D. 4 sets of 2 reps

Question 10

The most appropriate fitness test to assess agility for a basketball player is the:

- A. Illinois agility test
- B. VicFit agility test
- C. Semo agility test
- D. 5-0-5 agility test

Question 11

Below is a sample of an interval training program.

Sets	Repetitions	Distance	Rest interval
2	3	400m	90 seconds

Which of type of interval training is being employed?

- A. Short
- B. Intermediate
- C. Fartlek
- D. Long

Question 12

An increase in cardiac output at the commencement of exercise is due mainly to:

- A. An increased tidal volume
- B. A decreased heart rate
- C. An increased stroke volume
- D. All of above

SECTION A - continued

Question 13

Which of the following factors are most likely to influence the individual component of the socio-ecological model?

- A. Knowledge, attitudes and beliefs
- B. Parental and sibling influence
- C. Availability and access to facilities
- D. Mandated time for physical education classes

Question 14

During isokinetic resistance training:

- A. The amount of weight being lifted remains constant throughout the range of motion
- B. The muscle length remains constant while force is being produced
- C. The muscle length shortens while force is being produced
- D. The amount of weight being lifted varies throughout the range of motion

Question 15

Which of the following physical activity measures is an objective method of analysis?

- A. Recall surveys
- B. Observation tools
- C. Diaries
- D. None of the above

**END OF SECTION A
TURN OVER**

SECTION B- Short answer questions

Instructions for Section B

Answer **all** questions in the spaces provided.

Answer this section using a **pen**.

Question 1

The social-ecological model is used to explain physical activity participation.

a. Identify the four components of the social-ecological model.

i. _____

ii. _____

iii. _____

iv. _____

4 marks

b. With reference to the social-ecological model what is meant by a multi-level intervention approach.

2 marks

SECTION B – Question 1 - continued

- c. Using an example for each, explain how two of the components identified above could influence physical activity levels.

Component 1: _____

Component 2: _____

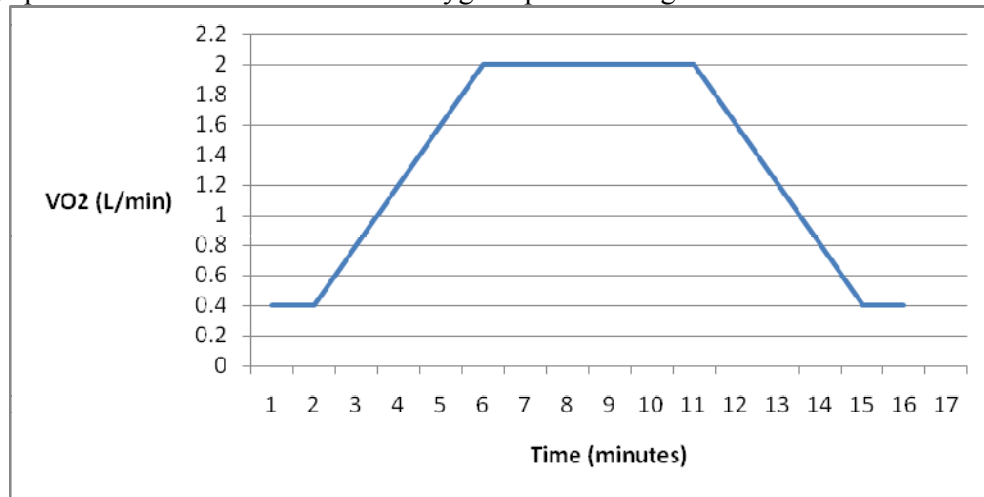
2+2= 4 marks

Total 10 marks

SECTION B – continued
TURN OVER

Question 2

The graph below shows an individual's oxygen uptake during an exercise bout.



- a. Referring to the graph above, identify what happens at the 2 minute mark and state why?

2 marks

- b. Identify two acute responses, one respiratory and one cardiovascular to exercise that would enable the change identified in Part a. to occur.

Respiratory response: _____

Cardiovascular response: _____

1 + 1 = 2 marks

SECTION B – Question 2 - continued

- c. Explain what is happening between the 6 and 11 minute marks of the exercise bout.

2 marks

d.

- i. Identify the time range that the individual is experiencing excess post exercise oxygen consumption.

- ii. How do you know when EPOC has ceased? Make specific references to the graph provided.

1 + 1 = 2 marks
Total 8 marks

SECTION B – continued
TURN OVER

Question 3

Athletes can be intrinsically or extrinsically motivated.

- a. Clearly explain the difference between intrinsic and extrinsic motivation providing an example of each.

4 marks

- b. Most coaches believe to be intrinsically motivated is of more benefit to athletes. Explain why they would believe this.

2 marks

Total 6 marks

SECTION B – continued

Question 4

a. Circle the correct responses

The National Physical Activity Guidelines aim to promote **fitness** / **health** benefits of physical activity. For Australian children and youth the NPAGs recommend at least **30 minutes** / **60 minutes** of **moderate** / **moderate to vigorous** physical activity every day.

3 marks

b. Part a. referred to Recommendation 1 for Australian children and youth.

State recommendation 2 for Australian children and youth.

2 marks

Total 5 marks

SECTION B – continued
TURN OVER

Question 5

Ergogenic aids are substances, methods or devices that enhance performance.

- a. In the table below match the following legal and illegal substances with the athletes that would be most likely to use that ergogenic aid.

- Beta blockers
- Erythropoietin (EPO)
- Bicarbonate
- Growth hormone

Athlete	Legal/ illegal substance
400m swimmer	
Sprint cyclist	
Archery	
Marathon runner	

4 marks

- b. Select one of the athletes from the table above and justify your choice of the ergogenic aid most appropriate for them.

3 marks

- c. Outline a potential negative side effect associated with the use of the ergogenic aid discussed in Part b.

1 mark

Total 8 marks

SECTION B – continued

Question 6

At the end of the 2010 AFL season James Hird took over as the Essendon Football Club coach. Under Hird the Essendon players have started their pre-season training for the 2011 season. Many of the players are saying that it is the hardest pre-season training that they have completed.

- a. Suggest and outline a physiological recovery method the players can use to ensure that they are 100% recovered for their next training session.

2 marks

- b. Suggest and outline a nutritional strategy the Essendon players could use to enhance performance and recovery?

2 marks

- c. The mind can be trained as the body can be. Outline a psychological technique the Essendon players could utilise to enhance their performance.

2 marks

SECTION B – continued

- d. Outline the process Hird and his staff should go through to develop and evaluate a new effective training program.

4 marks

- e. List two types of data Hird and his staff could collect.

1. _____
2. _____

2 marks

- f. Explain how each type of data could be used to develop an effective training program.

4 marks

Total 16 marks

SECTION B – continued

Question 7

Carbohydrates are a food fuel for two of the three energy systems that supply our bodies with ATP.

- a. Provide a sporting example for each of the two energy systems that use carbohydrates as a food fuel.

2 marks

- b. Compare and contrast the two energy systems that use carbohydrates as a food fuel.

4 marks

Total 6 marks

SECTION B – continued
TURN OVER

Question 8

The Hawaii Ironman is a long distance triathlon requiring competitors to complete a 3.86 km swim, 180.25 km bike and a marathon 42.195 km run without a break often in hot conditions.

- a. Other than dehydration and heat exhaustion, identify the most likely cause of fatigue for The Hawaii Ironman?

_____ 1 mark

- b. Explain the consequences of the cause of fatigue identified above to ATP production.

_____ 3 marks

Sports drinks are used by triathletes to avoid dehydration.

- c. Outline the difference between hypertonic, hypotonic and isotonic drinks sports drinks.

Hypertonic: _____

Hypotonic: _____

Isotonic: _____

1 + 1 + 1 marks

Total 7 marks

SECTION B – continued

Question 9

Place the following methods of assessing physical activity in order from most accurate to most practical.

Recall surveys/diaries

Pedometry

Accelerometry

Observational tools

Most accurate

1. _____

2. _____

3. _____

4. _____

Most practical

Total 4 marks

SECTION B – continued
TURN OVER

Question 10

Meaghan is a state level High Jumper looking to improve her performance to hopefully make the national team. She has been told by her coach she needs to improve her power.

- a. Define muscular power.

1 mark

- b. Suggest appropriate weight training parameters for Meaghan to improve her muscular power.

Sets	Reps	Load	Rest

4 marks

- c. Justify the load you have selected in the table above.

1 mark

SECTION B – Question 10 - continued

- d. Discuss the considerations with regards to the following training principles training principles Meghan will need to keep in mind when training for muscular power.

Progressive overload: _____

Frequency: _____

Intensity: _____

Specificity: _____

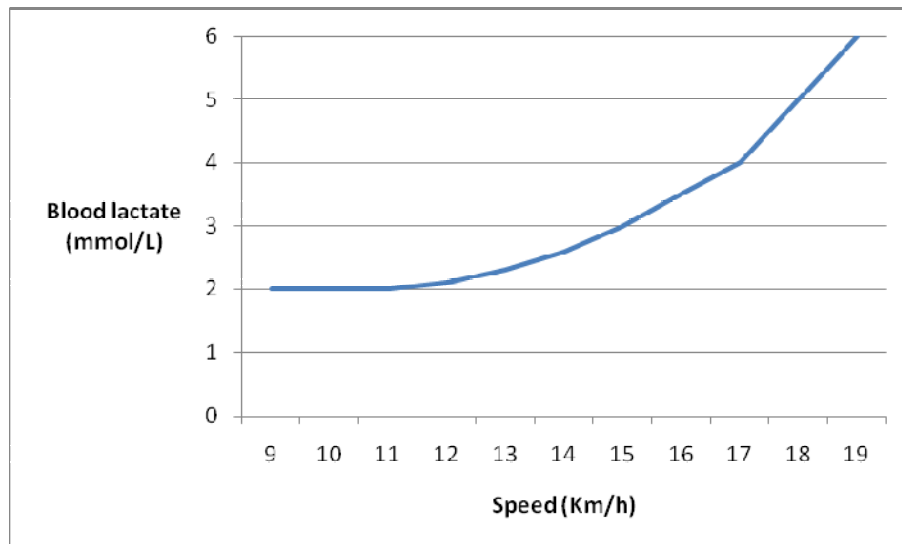
1 + 1 + 1 + 1 = 4 marks

Total 11 marks

SECTION B – continued
TURN OVER

Question 11

The table below represents blood lactate concentration of an individual during an exercise session.



- a. Describe the relationship of the graph.

1 mark

- b. Explain lactate inflection point.

2 marks

SECTION B – Question 11 - continued

- c. Identify the type of athlete a high lactate inflection would benefit and it would enhance their performance.

2 marks

- d. Name the type of recovery that should be used following this exercise session and explain the physiological reason why.

4 marks

Total 9 marks

SECTION B – continued
TURN OVER

Question 12

The Anti-Doping Agency (WADA) is responsible for the World Anti-Doping Code implementation and compliance.

- a. Discuss the purpose of the World Anti-Doping Code.

1 mark

- b. List three ways an athlete could violate the World Anti-Doping Code.

- 1) _____
- 2) _____
- 3) _____

3 marks

Total 4 marks

SECTION B – continued

Question 13

Government and non-government organisations play a role in promoting adherence to the National Physical Activity Guidelines in schools, workplace and communities settings.

Name and outline two physical activity programs promoted by government and non-government organisations in schools, workplace and communities. You can only choose one program from each setting.

Setting: _____

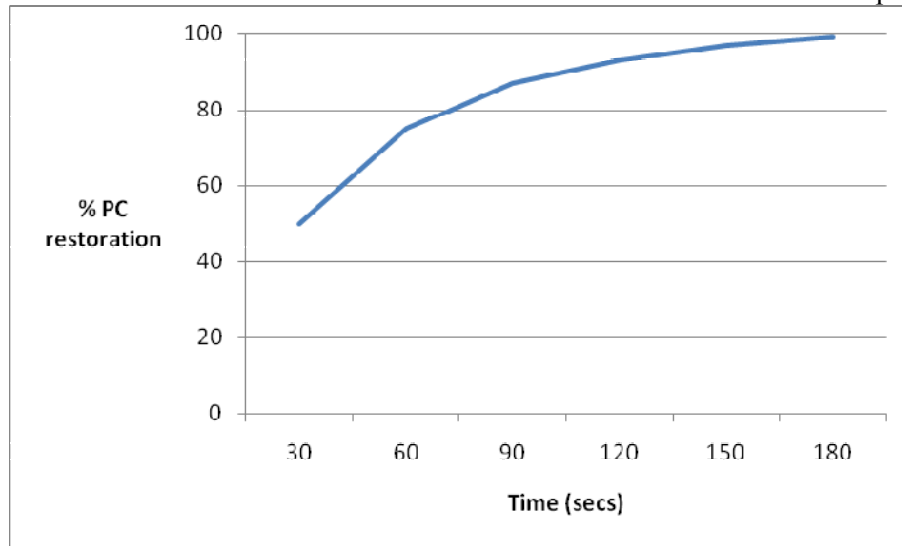
Setting: _____

2 + 2 = 4 marks

SECTION B – continued
TURN OVER

Question 14

The graph below shows an individual's PC restoration after an exhaustive 200m sprint.



- a. Referring to the graph discuss the relationship between PC restoration and time.

2 marks

- b. What are the implications if the individual was to complete a 200m sprint after 120 seconds?

2 marks

SECTION B – Question 14 - continued

- c. Name and describe the type of recovery that should be used between 100m sprints and explain why.

4 marks
Total 8 marks

END OF QUESTION AND ANSWER BOOK