

**‘2018 Examination Package’ -
Trial Examination 2 of 7**

STUDENT NUMBER

Figures										Letter
Words										

PHYSICAL EDUCATION

Units 3 & 4 –Written examination

(TSSM’s 2012 trial exam updated for the current study design)

Reading time: 15 minutes
Writing time: 2 hours

QUESTION & 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	11	11	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 21 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

Hypotonic sports drinks have a carbohydrate concentration of:

- A. 4-8g/100ml
- B. Less than 4g/100ml
- C. Greater than 8g/100ml
- D. 0g/100ml

Question 2

When assessing fitness which of the following factors need to be considered?

- A. Informed consent
- B. Validity of tests
- C. Sequencing of tests
- D. All of the above

Question 3

The work periods and rest periods for a games analysis were calculated to have a work: rest ratio of 1:3. The dominant system used during the work periods would be:

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

Question 4

In recent years Global Positioning System (GPS) devices have become a popular tool of AFL clubs. Which of the following data collection methods would a GPS be most useful for?

- A. Skill analysis
- B. Work-to-rest ratios
- C. Movement patterns
- D. Heart rate analysis

Question 5

Aerobically trained individuals have a greater a-vO₂ than untrained individuals. Which of the following factors does not influence a-vO₂?

- A. Mitochondria
- B. Oxidative enzymes
- C. Myoglobin
- D. Capillarisation

SECTION A - continued

Question 6

Which of the following would have the largest mass?

- A. Tennis ball
- B. Golf ball
- C. Medicine ball
- D. Volleyball

Question 7

Rowing would be an example of which classification of lever?

- A. 1st class
- B. 2nd class
- C. 3rd class
- D. 4th class

Question 8

Which of the following sports would be the most open on an open-closed continuum?

- A. Golf
- B. Water polo
- C. Ten pin bowling
- D. Tennis

Question 9

Which of the following is the most appropriate progressive overload for a short interval session consisting of 6 X 50m sprints, done in 7 seconds with 35 seconds rest between each?

- A. 7 X 50m performed in 6 seconds with 35 seconds rest
- B. 7 X 60m performed in 7 seconds with 20 seconds rest
- C. 7 X 50m performed in 7 seconds with 35 seconds rest
- D. 7 X 60m performed in 6 seconds with 35 seconds rest

**SECTION A – continued
TURN OVER**

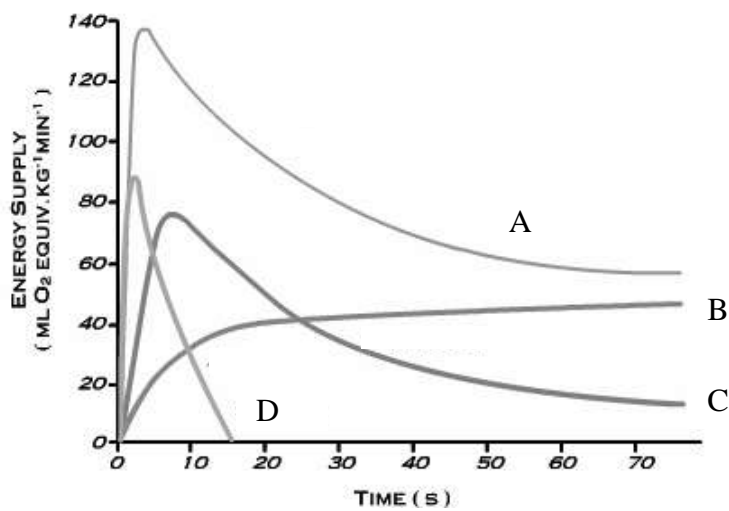
Question 10

The characteristics of Type IIB muscle fibres include:

Characteristic	A	B	C	D
Myoglobin content	High	Low	Low	Low
Fatigability	Low	Low	High	Intermediate
PC stores	Low	High	High	High
Myosin-ATPase activity	Low	Low	High	High

Use the following graph to answer questions 11-15.

ENERGY SUPPLY DURING CYCLE EXERCISE TO EXHAUSTION AT 110% VO₂ MAX



Source: e-Teaching Physical Education 2007 edition.

Question 11

What is the ATP yield per molecule for the energy system represented by Line D?

- A. Less than 1
- B. 1
- C. 2
- D. 36-38

SECTION A – continued

Question 12

Identify the fuel source/s of the energy system represented by Line C.

- A. Glycogen
- B. Creatine Phosphate
- C. Lipids
- D. Amino Acids

Question 13

What does Line A represent on the graph?

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

Question 14

Which energy system is dominant at the 20 second point on the graph?

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

Question 15

Identify the by-product/s of the energy system represented by Line B.

- A. Lactate, Hydrogen ions
- B. Creatine, Phosphate
- C. Heat, ATP, Water
- D. Heat, CO₂, Water

**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 (12 marks)

A golfer wanted to experiment with some different practice strategies to improve his game.

a. For each strategy outline what the golfer would have done during the session.

MASSED PRACTICE

Outline: _____

DISTRIBUTED PRACTICE

Outline: _____

4 marks

b. With regard to the types of practice list one advantage and one disadvantage.

	MASSED	DISTRIBUTED
ADVANTAGE		
DISADVANTAGE		

4 marks

SECTION B – Question 1 – continued

- c. The golfer enlisted the help of a professional to provide feedback during the distributed practice sessions. Outline two ways in which this feedback may have been implemented.

4 marks
Total 12 marks

Question 2 (13 marks)

Each October, prospective AFL players participate in the AFL Draft Camp. The table below shows some of the fitness components and fitness tests assessed during the draft camp.

- a. Complete the table below by identifying a fitness component, a definition, a recognised fitness test and a specific training method for that fitness component.

Fitness component	Definition	Recognised fitness test	Specific training method
	Ability of the heart and blood vessels to supply oxygen to working muscles during exercise.		
Speed		20m sprint	Short/immediate interval
Muscular power		Two tests: - Vertical jump test - Running vertical jump test	
Agility		AFL agility test	

7 marks

SECTION B – Question 2 – continued
TURN OVER

Another test conducted is the Anaerobic Sprint-Recovery Test, it involves the player sprinting 30m six times on a 20-second time cycle.

For example:

If a player runs 30m in 4 seconds, he then has 16 seconds to recover before performing the next 30m sprint. The player's six sprint times are added together to calculate their score.

b. There are a number of different tests that are similar to the Anaerobic Sprint Recovery Test.

i. Name a recognised fitness test that is similar to the Anaerobic sprint-recovery test.

ii. What does this test the body's ability to do?

1 + 1 = 2 marks

At the AFL Draft Camp muscular power of the lower body is tested with a standing vertical jump and a running vertical jump.

c. With reference to a training principle, discuss why the players are assessed using both tests.

2 marks

d. List two factors that affect a player's speed.

1. _____

2. _____

2 marks

Total 13 marks

SECTION B – continued

Question 3 (9 marks)

When we commence physical activity, changes in the body’s systems occur immediately to meet the demands placed upon the body.

a. Clearly explain the difference between acute and chronic responses.

4 marks

The table below shows the heart rate responses of two thirty year old males participating in a short sub-maximal exercise bout and recovery period.

Table 1.1

	Rest HR (bpm)	Exercise HR 1 min (bpm)	Exercise HR 2 min (bpm)	Exercise HR 3 min (bpm)	Exercise HR 4 min (bpm)	Exercise HR 5 min (bpm)	Recovery HR 1 min (bpm)	Recovery HR 2 min (bpm)	Recovery HR 3 min (bpm)
Subject A	76	107	121	133	140	144	126	111	98
Subject B	62	83	94	95	95	96	81	68	63

b.

i. Indicate which of the two subjects is likely to be a trained individual.

ii. Use the data in Table 1.1 to justify your response.

1 + 2= 3 marks

**SECTION B – Question 3 – continued
TURN OVER**

- c. Did either of the subjects achieve a steady state during the exercise bout? Justify your response.

2 marks
Total 9 marks

Question 4 (4 marks)

- a. Player A weighs 80kg and is travelling at a speed of 7m/sec
Player B weighs 100kg and is travelling at a speed of 5 m/sec
What is the momentum of each player?

2 marks

- b. Suggest the likely outcome of a collision between two rugby players.

2 marks
Total 4 marks

SECTION B – continued

Question 5 (7 marks)

Read the following.

Travis Cloke tunes in to crowd noise

Travis Cloke is listening to crowd noise on his iPod while practising to help improve his goalkicking.

WHEN Travis Cloke missed a couple of easy shots on goal in the first Grand Final last year, there was a chilling feeling that six seasons of wayward kicking would ultimately cost Collingwood a premiership.

"I've analysed it with our computer technicians and worked closely with a lot of different people and am using a different technique with the iPod in the ears, listening to a bit of crowd noise (at practice) - getting used to the loud noises of big crowds - and it seems to be working."

Adapted from: <http://www.heraldsun.com.au/sport/afl/travis-cloke-tunes-in-to-crowd-noise/story-e6frf9jf-1226041238625>

a. Identify and explain the technique being used by Cloke.

2 marks

b. Other than the technique described in part **a.** Suggest another psychological strategy Cloke could use to enhance his performance and describe how he could implement it.

3 marks

SECTION B – Question 5 – continued
TURN OVER

c. Discuss the phenomenon that Cloke is trying to avoid by using the technique described.

2 marks
Total 7 marks

Question 6 (6 marks)

AFL Football and Rugby are two sports requiring considerable skill in addition to the need to be well balanced.

a. List two factors which enable an athlete in these sports to be more balanced.

i. _____

ii. _____

2 marks

b. With regards to one of the factors above, list a specific example from within the sport where that factor would benefit the player.

2 marks

c. Equilibrium is another term used for balance.

From the sport of gymnastics, provide an example of both static and dynamic equilibrium.

2 marks
Total 6 marks

SECTION B – continued

Question 7 (10 marks)

Below are the speeds (km/hour) of three athletes during a 100m sprint at each of the 25 splits during the race

	0-25m	25-50m	50-75m	75-100m
Athlete 1	28.67	29.90	31.45	34.56
Athlete 2	35.56	36.52	37.80	37.10
Athlete 3	32.35	33.35	34.50	34.86

a. What is the likely finishing order of the three athletes from this race?

1st _____ 2nd _____ 3rd _____ 1 mark

b. With reference to the data explain how you arrived at this finishing order.

2 marks

c. Define acceleration.

1 mark

d. Outline one example from the data where acceleration was evident.

1 mark

SECTION B – Question 7 - continued
TURN OVER

- e. Outline one example from the data where negative acceleration was evident and suggest a reason why this may have occurred.

2 marks

- f. Interval training can be a very beneficial training method for sprint athletes.
- i. Which type of interval training would be recommended for these athletes?

- ii. What Work: Rest ratio should be applied?

- iii. What type of recovery would be suggested following a 100 sprint?

1 + 1 + 1 = 3 marks

Total 10 marks

Question 8 (12 marks)

On September 25th, 2011, Kenya's Patrick Makau won the Berlin marathon, setting a new World record time of 2 hour 3 minutes 38 seconds, breaking Haile Gebrselassie's previous record by 21 seconds.

- a. Other than dehydration and heat exhaustion, identify the most likely cause of fatigue during a marathon?

1 mark

SECTION B – Question 8 - continued

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

3 marks

c. Outline two strategies Makau may utilise to delay the cause of fatigue identified in part **a.**

Strategy 1: _____

Strategy 2: _____

2 + 2= 4 marks

SECTION B – Question 8 - continued
TURN OVER

- d.** With reference to the principles of training, discuss how Makau may have applied them to his preparation for the marathon.

4 marks
Total 12 marks

Question 9 (10 marks)

In recent years it has become very popular in the AFL to conduct extensive fitness testing of prospective players.

- a.** List and explain two benefits of fitness testing

4 marks

SECTION B – Question 9 - continued

- b. Aerobic capacity can be measured using direct or indirect testing.

Complete the following table outlining tests used in each category and an advantage and disadvantage of each.

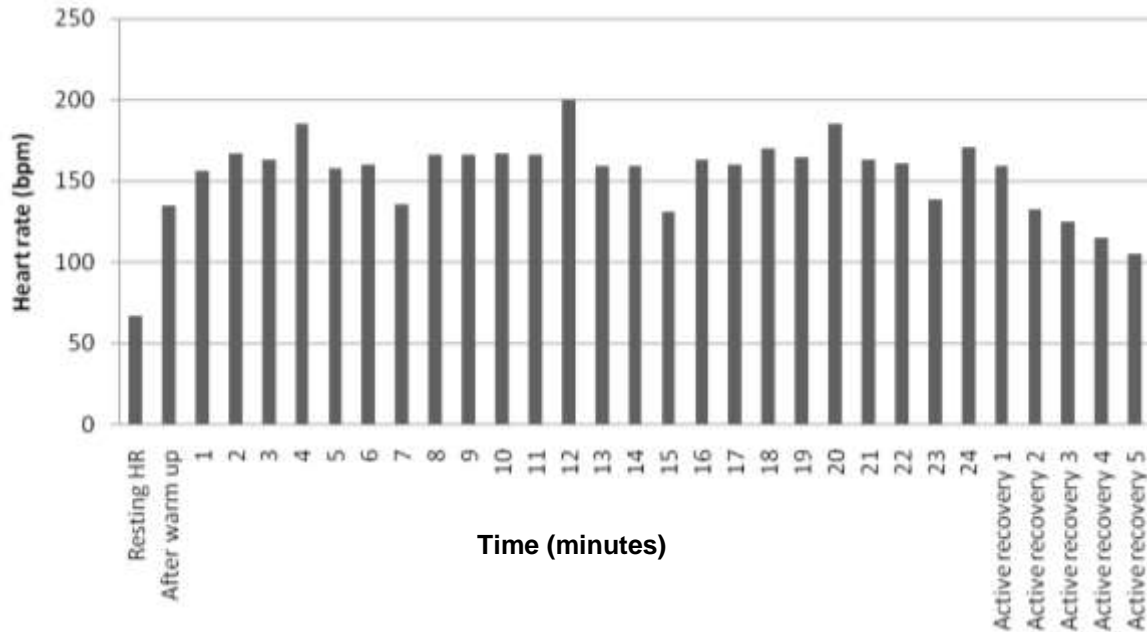
	DIRECT	INDIRECT
Fitness Test		
Advantage		
Disadvantage		

6 marks
Total 10 marks

SECTION B – continued
TURN OVER

Question 10 (8 marks)

The graph below displays heart rate readings from a training session.



- a.**
- i.** Use the data to identify the training method performed.

- ii.** Outline the benefits of the training method identified in part **i.**

1 + 2 = 3 marks

- b.** The student's heart rate increased during the warm up and for the first two heart rate readings before decreasing for the third.

- i.** What is this phase known as?

SECTION B – Question 10 – continued

ii. Discuss energy system usage during this phase.

1 + 2 = 3 marks

c. Analyse the active recovery heart rate readings. In relation to oxygen consumption, name this phase and outline what is happening.

2 marks

Total 8 marks

SECTION B – continued
TURN OVER

Question 11 (14 marks)

Usain Bolt has set the last three 100m World Records, 9.72, 9.69 and 9.58 seconds.

The start is crucial to the 100m sprint.

- a.** Identify the fitness component that will determine a 100m sprinter's ability to respond at the start of the race.

1 mark

- b.** Identify a different fitness component, essential for the 100m sprint.

1 mark

- c.** What type of interval training program would Usain Bolt use in preparation for running the 100m sprint? Include recommendations regarding the structure of the interval training program.

3 marks

- d.** Name and describe the type of recovery that should be used following interval training for the 100m and explain why.

3 marks

SECTION B – Question 11 – continued

