Trial Examination 2018

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER | | | | | | | | | Letter |

PHYSICAL EDUCATION, UNITS 3 AND 4

Written examination

Reading time: 15 minutes
Total writing time: 2 hours

QUESTION AND ANSWER BOOK

Structure of book

Section	*Number of questions*	*Number of questions to be answered*	*Number of marks*
A	15	15	15
B	15	15	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 correction fluid/tape.
- No calculator is allowed in this examination.

Materials supplied
- Question and answer book of 22 pages.
- Answer sheet for multiple choice questions.

Instructions
- Write your **student number** in the space provided above on this page.
- Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, **and** sign your name in the space provided to verify this.
- All written responses must be in English.

At the end of the examination
- Place the answer sheet for multiple-choice questions inside the front cover of this book.

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

SECTION A – Multiple-choice questions

Instructions for Section A

Answer **all** questions in pencil on the answer sheet provided for multiple-choice questions.

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

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

Marks will **not** be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

Question 1

Periodisation of training is the systematic planning of physical training to reach

A. optimal performance in each microcycle.

B. optimal performance in each mesocycle.

C. optimal performance from the beginning of the competition season.

D. optimal performance at the most important competition of the year.

Question 2

Which of the following appropriately characterises the Associative Stage of Learning?

A. the performer has developed anticipation and is able to self-rectify errors

B. the performer makes fewer errors and is more focused on how to perform a particular skill

C. the performer will show rapid improvement and is able to perform the skill routinely with few errors

D. the performer improves best with precise feedback and is confident when performing the skill

Question 3

The basis of Newton's three laws of motion include

A. inertia, acceleration and reaction.

B. inertia, acceleration and force.

C. resistance, inertia and force.

D. equilibrium, force and axis.

Question 4

A recognised fitness test which requires participants to pedal a mechanically braked bicycle ergometer maximally for 30 seconds in a laboratory setting is called the

A. VO_2 maximum test on a bicycle.

B. PWC 170 cycle test.

C. Phosphate Recovery Test.

D. Wingate anaerobic test.

Question 5

Psychological benefits of aerobic training include

A. increased oxidative enzymes, decreased ventilation at rest and decreased heart rate at rest.

B. increased stress levels, decreased depression and decreased anxiety.

C. increased stroke volume at rest, decreased total lung volume at rest and decreased capillary density at rest.

D. increased self-esteem, decreased depression and decreased anxiety.

Question 6

The moment of inertia of an object is its

A. resistance to gravity.

B. mass multiplied by its weight.

C. resistance to change its current state of angular motion.

D. momentary change in its angular motion.

Question 7

Acute cardiovascular responses to exercise include

A. increased stroke volume and increased ventilation rate.

B. increased cardiac output and increased pulmonary diffusion.

C. increased stroke volume at maximal intensity levels and increased blood pressure.

D. increased blood pressure and increased arteriovenous oxygen difference.

Question 8

Regarding fast twitch fibres, which of the following adaptations could occur as a result of the 6-week, short interval running training program shown below, which is undertaken three times per week?

Distance	Intensity	Rest between repetitions	Rest between sets	Repetitions	Sets
20 metres	Maximal 100%	30 seconds	3 minutes	6	4

A. increased alveoli surface area and increased pulmonary diffusion

B. increased stroke volume and decreased resting heart rate

C. increased phosphocreatine stores and increased contractile proteins

D. increased triglyceride stores and increased pulmonary diffusion

Question 9

Consuming water before, during and after exercise

A. provides the body with carbohydrates.

B. can enhance performance, maintain constant core temperature and assist with recovery.

C. decreases blood plasma.

D. provides no physical benefits to the body.

Question 10

The short course Phosphate Recovery test requires participants to sprint for seven seconds with a 23 second recovery between each of the eight sprints.

The test lasts for a total of four minutes.

Which fitness component is being assessed by this test?

A. speed

B. aerobic power

C. anaerobic capacity

D. agility

Question 11

Which of the following is the most effective way to improve muscular endurance?

A. heavy weights with low repetitions

B. light weights with low repetitions

C. light weights with high repetitions

D. heavy weights performed with speed

Question 12

An effective exercise training session incorporates the following components in the correct order.

A. warm up, skill phase, stretching

B. warm up, conditioning phase, cool down

C. conditioning phase, skills phase, cool down

D. conditioning phase, skills stretching, cool down

Question 13

A Tour de France cyclist moving with a constant velocity will have

A. constant acceleration.

B. no forces acting on it.

C. no acceleration.

D. constant deceleration.

Question 14

Examples of intrinsic feedback include

A. knowledge of performance and proprioception

B. touch and proprioception

C. knowledge of performance and knowledge of results

D. knowledge of results and proprioception

Question 15

The principles involved in a qualitative movement analysis include

A. observation, intervention, feedback and error correction.

B. preparation, intervention, evaluation and feedback.

C. preparation, observation, evaluation and error correction.

D. observation, intervention, evaluation and feedback.

END OF SECTION A
TURN OVER

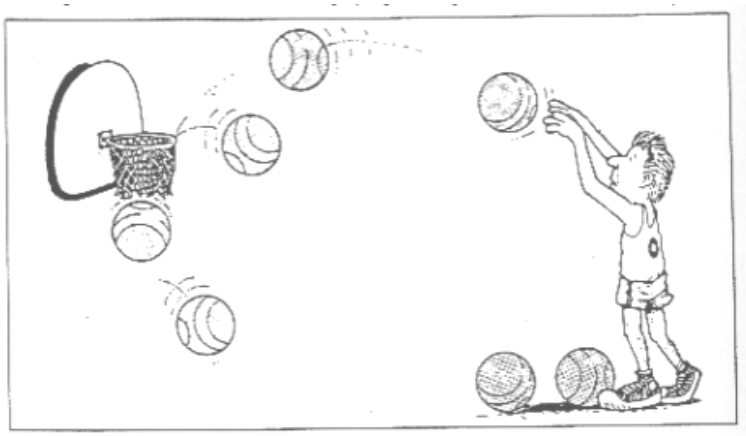
SECTION B – Short-answer questions

Instructions for Section B

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

Question 1 (8 marks)

The diagram below illustrates a basketball player practicing set shots over a 30-minute period.



a. Identify the type of practice most likely being used in this picture. 1 mark

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b. Outline **two** disadvantages of this type of practice. 2 marks

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c. Name and describe a different method of practice which would reduce the disadvantages given in your answer to **part b.** 2 marks

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d. **i.** State Newton's second law of motion. 1 mark

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ii. Explain, with reference to Newton's second law of motion, why an Under 10 Basketball player is disadvantaged if they must use an adult sized basketball when shooting from the free-throw line. 2 marks

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Question 2 (4 marks)

Glycogen breakdown can occur with or without the presence of oxygen.

In the table below, identify **one** advantage and **one** disadvantage for each type of breakdown.

	Advantage	**Disadvantage**
With Oxygen		
Without Oxygen		

Question 3 (3 marks)

'Oxygen deficit only occurs at the commencement of exercise.'

a. Do you agree with the above statement? Circle the correct answer. 1 mark

agree disagree

b. Justify your response in **part a.** 2 marks

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Question 4 (15 marks)

The data in the table below was collected from an Activity Analysis of a Year 12 Student playing in an interschool basketball match which lasted for 40 minutes.

Work:Rest Data Work = sprint and stride Rest = jog, walk and standing still	**Movement Patterns**
Total Work Time – 16 minutes 10 seconds Total Rest Time – 23 minutes 50 seconds Longest Work – 43 seconds Shortest Work – 1 second Longest Rest – 3 minutes Shortest Rest – 2 seconds	Forward Movement – 522 m Backward Movement – 112 m Shuffle sideways – 153 m Change of direction – 222 times
Movement Intensities	**Skills**
Sprint – Maximal intensity – 8 minutes 45 seconds Stride – 4 mins 15 seconds Jog – 12 minutes 20 seconds Walk – 5 minutes 40 seconds Standing still – 9 minutes	Overhead Passes – 35 Chest Passes – 12 Shoulder Passes – 38 Rebounds – 23 Lay ups – 5 Shots in Key – 9 Shots outside Key – 5

a. In the table below, outline **one** advantage and **one** disadvantage for each of the data collection methods which could have been used to collect the information shown above. 4 marks

	Data Collection Method 1: Direct Observation/Statistical Recording	**Data Collection Method 2: Digital Recording**
Advantage		
Disadvantage		

b. Identify the training principle most dependent on the accurate collection of data from an Activity Analysis. 1 mark

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c. Complete the table below, using the data provided in the Activity Analysis at the beginning of this question. 6 marks

Fitness component	Recognised Fitness Test	Justification using data provided
Anaerobic Capacity	**1.**	**2.**
3.	Seated Basketball Throw	**4.**
5.	**6.**	Change of Direction 222 times Sprinting for 8 minutes 45 seconds Shuffle sideways 153 metres

d. Sum of Skinfold testing is used at the Australian Institute of Sport to measure the percentage of body fat of elite Australian representative basketballers.

Discuss **two** reasons why Sum of Skinfold testing may not be suitable for members of a school basketball team. 2 marks

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e. Outline **two** ethical considerations the basketball coach must consider prior to the players undertaking Sum of Skinfold testing. 2 marks

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Question 5 (6 marks)

a. With regard to acquisition of motor skills, constraints can impact performance.

Identify **one** individual, **one** environment and **one** task constraint which may impact on the ability of an individual to perform the butterfly stroke in swimming. 3 marks

Individual _____

Environment _____

Task _____

b. Describe how the constraints, identified in **part a.**, impact on the performance of skill movement in performing the butterfly stroke in swimming. 3 marks

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Question 6 (4 marks)

Distinguish between muscular strength and muscular power, using sporting examples to support your answer.

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SECTION B – continued

Question 7 (9 marks)

Zara is 28 years old. In February, she decided to train for the Melbourne Marathon which is held in October. The event distance is 42.2 kilometres. Her aim is to finish the event in 4 hours and 20 minutes. Zara is intending to undertake 8 months of training. She is starting from a moderate fitness level as she plays Netball twice each week and competes in local Fun Runs, ranging in distance from 5 to 10 kilometres.

Her first week of training for the event is shown below:

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Rest Day	5 km continuous run 70% HRM Time = 35 min	Rest Day	Rest Day	3 km continuous run 75% HRM Time = 18 min	Rest Day	7 km continuous run 70%HRM Time = 50 min

a. Complete the following table, providing appropriate training methods and principles, for Week 12 of Zara's training program for the Melbourne Marathon. 6 marks

	WEEK 12
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	

b. Throughout August, during weeks 21-25 of her training program, Zara is training every day completing between 8-20 kilometres in each session. In her training diary, Zara's entries show she is struggling to run at the same intensity she had in prior weeks. Her sister Sarah says she is being lazy and she should train more. Conversely Laura, a work colleague of Zara's, suggests she should reduce her training.

Whose advice should Zara take? Circle the correct answer. 1 mark

Sarah Laura

c. With reference to training principles, describe what might be causing Zara's loss of form? 2 marks

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Question 8 (3 marks)

Sally Pearson is an Australian Olympic gold medallist in the 100 m Hurdles event. Would you expect her to be at the same stage of learning for other athletic disciplines such as triple jump, compared to the 100 m Hurdles? Justify your answer.

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Question 9 (8 marks)

Position 1 **Position 2** **Position 3** **Position 4**

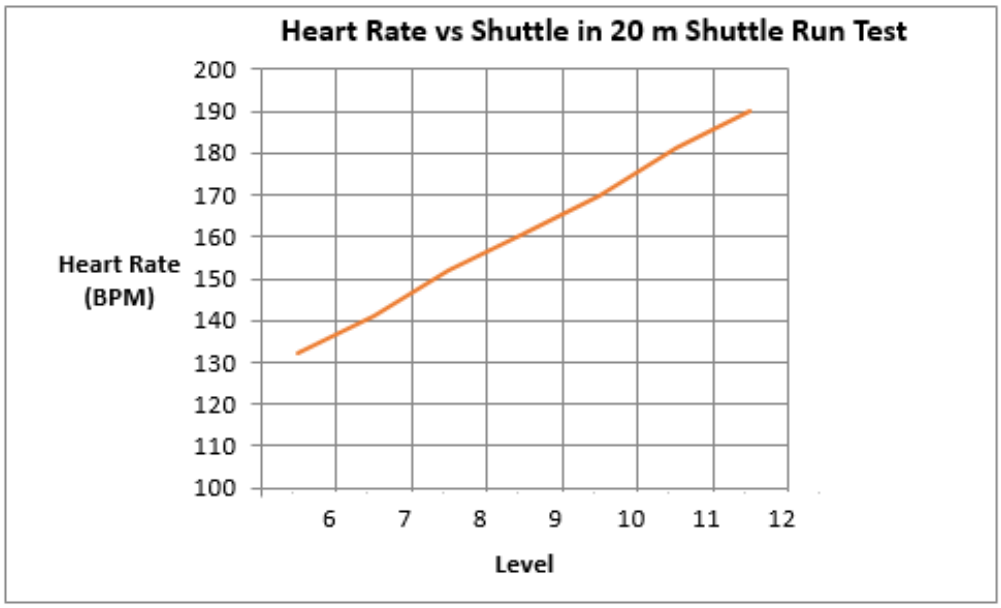
Reference: SportsAspire (Google Images)

Refer to the series of movements provided in the diagram above. The movement is performed as part of a floor gymnastics routine where the gymnast performs a short three metre run up prior to undertaking the series of movements shown above.

Provide a detailed discussion of the biomechanical principles which enable the successful performance of this movement sequence. You may use annotated diagrams to support your discussion.

Question 10 (12 marks)

The 20 m Shuttle Run Test (SRT) is a commonly used maximal running aerobic test. It invovles running between two lines, 20 m apart, in time to recorded beeps. The time between recorded beeps decrease each minute, identified as levels. The results for Mark, a 20 year old subject, are presented below.



a. Calculate Mark's maximum heart rate. 1 mark

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b. Identify the level on the test where Lactate Inflection Point would have occurred. 1 mark

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c. Explain what is occurring physiologically when an athlete exercises at intensities above their Lactate Inflection Point. 3 marks

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d. At the conclusion of 20 m SRT, three friends, Sharon, Rhonda and Katherine are overheard discussing Mark's 20 m SRT result. Mark can commit to train 3 times per week for 8 weeks to improve his result.

Sharon believes Mark will achieve a better result in the retest if he commits to aerobic training.

Rhonda believes he will achieve a better result if he commits to Intermediate Interval training.

Katherine believes a combination of both aerobic and Intermediate Interval training will be the most beneficial to improve performance. 7 marks

Critique the advice given by Sharon, Rhonda and Katherine. In your critique, include the likely outcome of each person's advice and whose advice is likely to bring about a more successful result for Mark.

Question 11 (11 marks)

The image below shows four snowboarders competing in a Snowboard Cross event.

Reference: New York Times 2010 (Google Images)

The Olympic Snowboard Cross was held at the 2018 Winter Olympic Games held in South Korea. This event covers approximately 1200 m. Snowboarders start in a starting gate and then navigate their way over a downhill course negotiating angled turns, various types of jumps, raised barriers, rollers, drops, steep and flat sections, designed to challenge the riders' ability to stay in control, whilst maintaining maximum speed.

The event is divided into two sections:

- The Qualification Round: a time trial where the athlete aims to complete the course in as fast a time as possible.
- The Elimination Rounds: athletes race 5 other competitors with the first 3 across the line advancing to the next round.

a. Using the Open and Closed Skill Continuum line below, mark where the qualification round **(Q)** and elimination rounds **(E)** would be placed on this continuum. 2 marks

Closed ⟷ Open

b. Justify your selection of the relative positioning for the qualification and elimination rounds in **part a.**, referring to the demands of the Snowboard Cross event. 3 marks

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c. As the photo at the start of this question indicates, snowboarders predominantly use a crouched position. Discuss the effect on performance of the crouched position in snowboarding. 3 marks

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d. Using references to the Snowboard Cross event, explain how a Snowboard Cross competitor could use mental imagery to enhance their performance. 3 marks

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Question 12 (4 marks)

Each year AFL clubs recruit players for their teams during the AFL draft. These players, when inducted into the teams, are introduced to a range of physical and psychological testing and data recording.

a. Outline an example of data which would be collected at the beginning of a training session to indicate the status of the players in the following area:

i. Physical _____ 1 mark

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ii. Psychological _____ 1 mark

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b. Explain why clubs insist all players, successfully recruited to an AFL club, report their physical and psychological state on arrival at each training session. 2 marks

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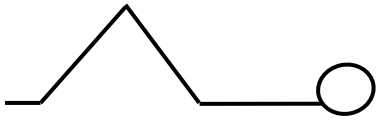
Question 13 (7 marks)

The 7-stage Abdominal Strength test aims to assess the abdominal strength of individuals. Subjects lay on their backs with their knees bent and the feet flat on the ground, as shown in the diagram below. They attempt to complete one sit up from each of the 7 stages listed. A satisfactory completion at each level occurs when the subject can successfully perform one full sit-up without their feet leaving the floor.

Starting Position: The athlete begins in this position for each of the 7 stages of the Abdominal Strength test.



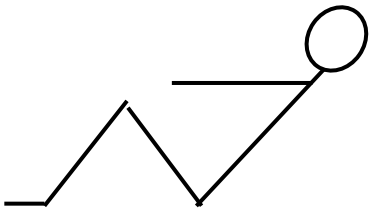
Stage 1 – Athlete curls up, so wrists reach the knees
Stage 2 – Athlete curls up, so elbows reach the knees
Stage 3 – Athlete crosses arms across abdominals, curls up, so chest touches thighs
Stage 4 – Arms held across chest, athlete curls up, so forearms touch thighs
Stage 5 – Arms held behind head, athlete curls up, so chest touches thighs
Stage 6 – As for level 5 but 2.5 kg weight held behind head, chest to thighs
Stage 7 – As for level 5 but 5 kg weight held behind head, chest to thighs

a. Which class of lever is involved in the movement undertaken in each stage of the test? Circle the correct answer. 1 mark

first class lever second class lever third class lever

b. Label the diagram below with the three parts of a lever: 3 marks

- Axis (A)
- Resistance Arm (R)
- Force Arm (F)



c. People with large upper bodies find this test difficult to complete. Explain, with reference to leverage, why this might be the case. 3 marks

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SECTION B – continued

Question 14 (11 marks)

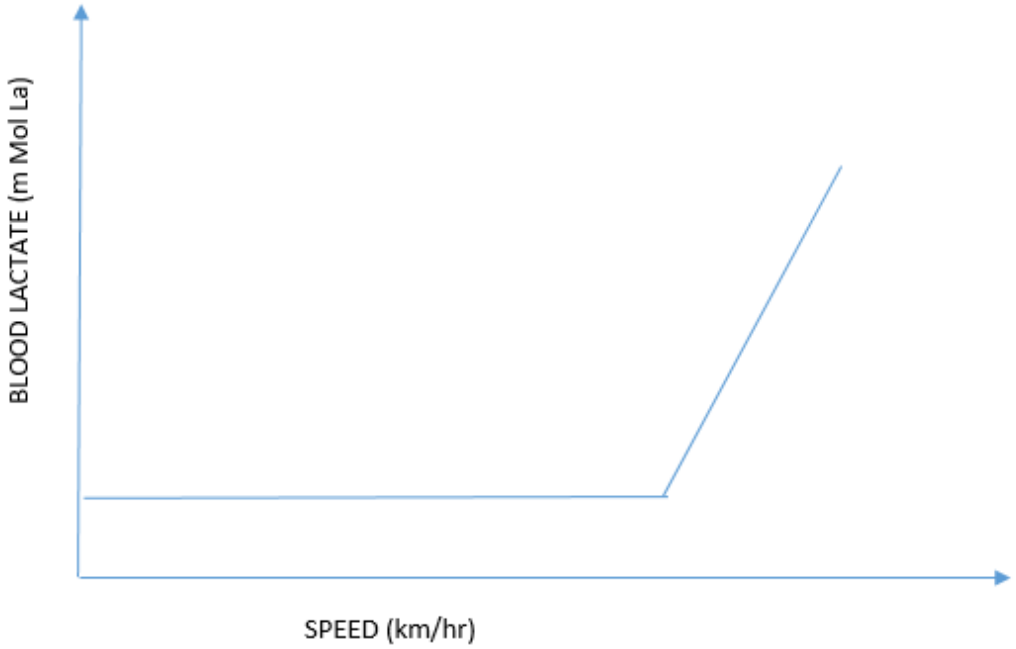
Ella has committed to a 3-month pre-season training program for soccer. Her program involves fartlek, long interval, intermediate interval and plyometrics training. Ella intends to utilise the correct training principles.

Ella is likely to illicit chronic muscular adaptations from the aerobic and anaerobic training methods she will participate in.

a. Complete the table below, identifying **two** muscular adaptations for each type of training, plus state **one** appropriate training method which would have helped to achieve these adaptations. 6 marks

Type of training	Muscular adaptation	Training Method
Aerobic	1. _____ 2. _____	
Anaerobic	1. _____ 2. _____	

After completing the 3-month training program, Ella completes a series of fitness tests. The graph below is a Blood Lactate result of one of her fitness tests.



b. Immediately after completing fitness testing, Ella was injured and unable to participate in any form of training for two months. On the graph above, predict the impact this will have, by drawing a new blood lactate line. 2 marks

c. Justify why the line you inserted in **part b.**, which represents blood lactate after two months of no training, is different to the original line. 3 marks

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END OF QUESTION AND ANSWER BOOK