



## Western Australian Certificate of Education Examination, 2014

### Question/Answer Booklet

# PHYSICAL EDUCATION STUDIES

## Stage 2

Please place your student identification label in this box

Student Number: In figures

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In words

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### Time allowed for this paper

Reading time before commencing work: ten minutes

Working time for paper: two and a half hours

### Materials required/recommended for this paper

#### *To be provided by the supervisor*

This Question/Answer Booklet

Multiple-choice Answer Sheet

Number of additional  
answer booklets used  
(if applicable):

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#### *To be provided by the candidate*

Standard items: pens (blue/black preferred), pencils (including coloured), sharpener,  
correction fluid/tape, eraser, ruler, highlighters

Special items: non-programmable calculators approved for use in the WACE examinations

### Important note to candidates

No other items may be taken into the examination room. It is **your** responsibility to ensure that you do not have any unauthorised notes or other items of a non-personal nature in the examination room. If you have any unauthorised material with you, hand it to the supervisor **before** reading any further.

## Structure of the examination

The WACE Physical Education Studies examination consists of a written component worth 70 per cent of the total examination score and a practical (performance) component worth 30 per cent of the total examination score.

## Structure of this paper

Section	Number of questions available	Number of questions to be answered	Suggested working time (minutes)	Marks available	Percentage of total exam
Section One: Multiple-choice	20	20	30	20	14
Section Two: Short answer	10	10	80	58	42
Section Three: Extended answer	4	2	40	20	14
<b>Total</b>					<b>70</b>

## Instructions to candidates

1. The rules for the conduct of WACE external examinations are detailed in the booklet *WACE Examinations Handbook 2014*. Sitting this examination implies that you agree to abide by these rules.
2. Answer the questions according to the following instructions.

Section One: Answer **all** questions on the separate Multiple-choice Answer Sheet provided. For each question, shade the box to indicate your answer. Use only a blue or black pen to shade the boxes. If you make a mistake, place a cross through that square, then shade your new answer. Do not erase or use correction fluid/tape. Marks will not be deducted for incorrect answers. No marks will be given if more than one answer is completed for any question.

Sections Two and Three: Write your answers in this Question/Answer Booklet.

3. You must be careful to confine your responses to the specific questions asked and to follow any instructions that are specific to a particular question.
4. Spare pages are included at the end of this booklet. They can be used for planning your responses and/or as additional space if required to continue an answer.
  - Planning: If you use the spare pages for planning, indicate this clearly at the top of the page.
  - Continuing an answer: If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question that you are continuing to answer at the top of the page.

**Section One: Multiple-choice****14% (20 Marks)**

This section has **20** questions. Answer **all** questions on the separate Multiple-choice Answer Sheet provided. For each question, shade the box to indicate your answer. Use only a blue or black pen to shade the boxes. If you make a mistake, place a cross through that square, then shade your new answer. Do not erase or use correction fluid/tape. Marks will not be deducted for incorrect answers. No marks will be given if more than one answer is completed for any question.

Suggested working time: 30 minutes.

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1. The total displacement divided by total time is the definition of
  - (a) instantaneous velocity.
  - (b) mean velocity.
  - (c) average acceleration.
  - (d) instantaneous acceleration.
  
2. Which one of the following is the **best** example of deceleration (negative acceleration)?
  - (a) a diver coming off the top platform
  - (b) a swimmer gliding in to touch the wall
  - (c) a cricket ball being bowled at the point of release
  - (d) the final instantaneous speed minus the starting instantaneous speed of a sprinter
  
3. If its acceleration has doubled, what does this mean for an object's velocity?
  - (a) velocity has increased
  - (b) velocity has halved
  - (c) velocity has quadrupled
  - (d) velocity will be zero
  
4. According to the coordination of linear motion, which statement is the **most** correct?
  - (a) All activities fall into one or two categories.
  - (b) Most activities fall into the sequential motion.
  - (c) Most activities fall into the simultaneous motion.
  - (d) Most activities fall into the simultaneous motion or sequential motion.

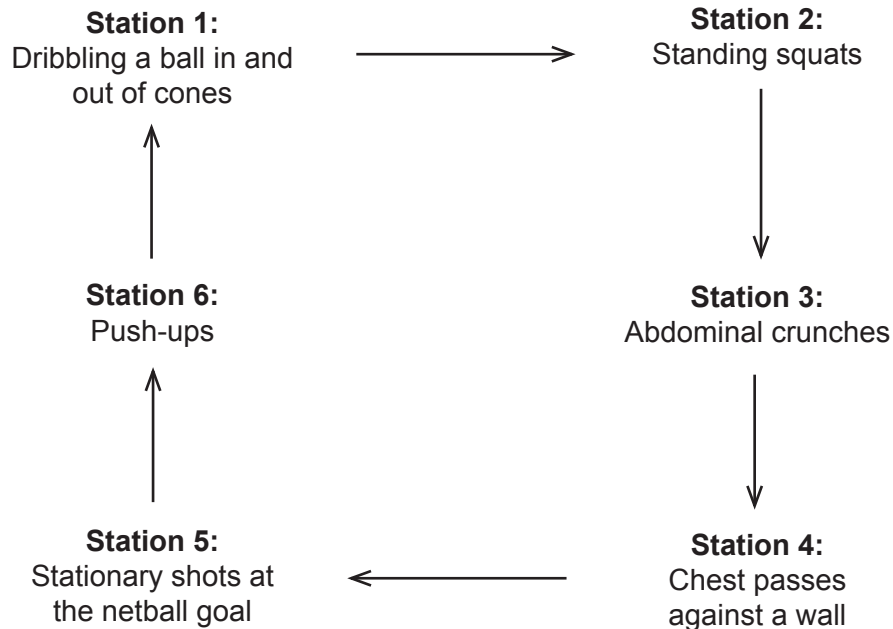
5. Which of the following components of fitness is **least** important to the shot putter pictured below when executing the skill?



- (a) muscular strength
  - (b) balance
  - (c) reaction time
  - (d) power
6. Which of the following is an adaptation in the respiratory system that occurs as a consequence of regular participation in physical activity?
- (a) a decrease in resting heart rate
  - (b) an increase in aerobic capacity
  - (c) a decrease in cardiac output
  - (d) an increase in respiratory rate
7. To facilitate the long-term development of muscular endurance, which is the **most** relevant training type and training principle?
- (a) continuous and duration
  - (b) cardiorespiratory endurance and frequency
  - (c) flexibility and intensity
  - (d) fartlek and reversibility
8. Which of the following order of words completes the statement correctly?  
Blood flow to the digestive system is \_\_\_\_\_ at rest than when exercising and  
blood flow to the muscular system is \_\_\_\_\_ at rest than when exercising.
- (a) greater, greater
  - (b) lower, lower
  - (c) lower, greater
  - (d) greater, lower

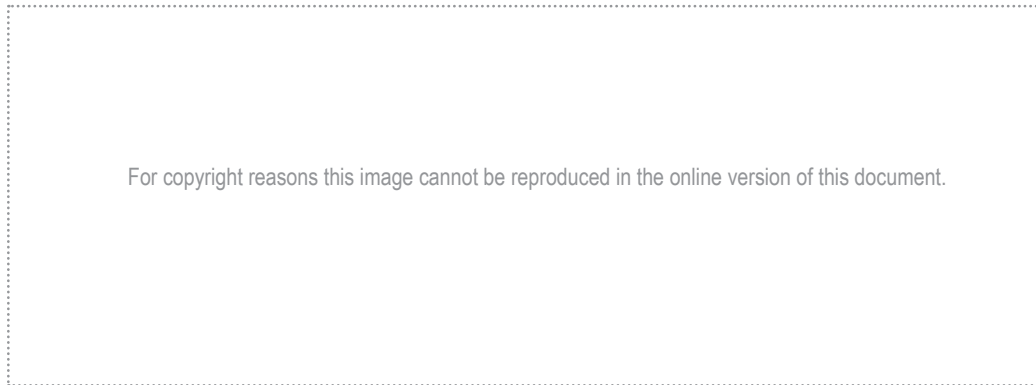
Questions 9 and 10 relate to the information below.

Katie is about to start pre-season training for her local netball team; her position in the team is goal shooter (GS). For a change, this year Katie has decided to plan a circuit for her pre-season training. Her six stations are shown below.



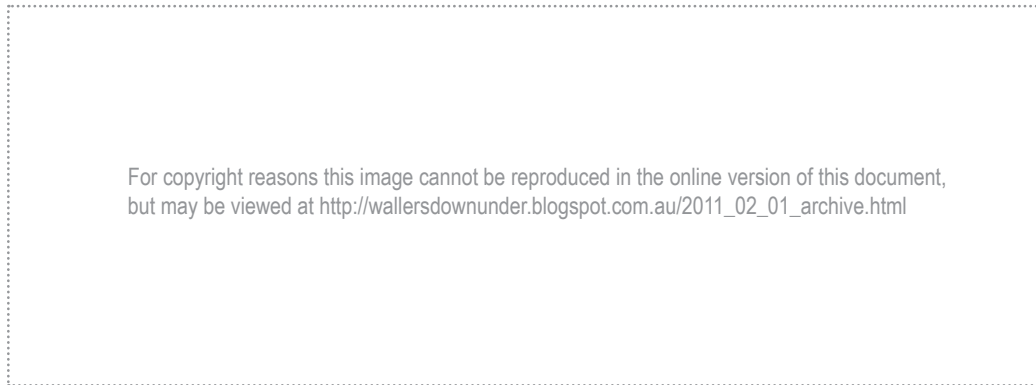
9. Identify one station that is the **least** appropriate for Katie to include in her circuit.
- (a) Station 1
  - (b) Station 2
  - (c) Station 3
  - (d) Station 4
10. Which of the following exercises would be **most** beneficial for Katie to include in her circuit plan?
- (a) 30 metre sprints
  - (b) 10 metre sprints
  - (c) dips
  - (d) sit-ups

Question 11 refers to the image below.



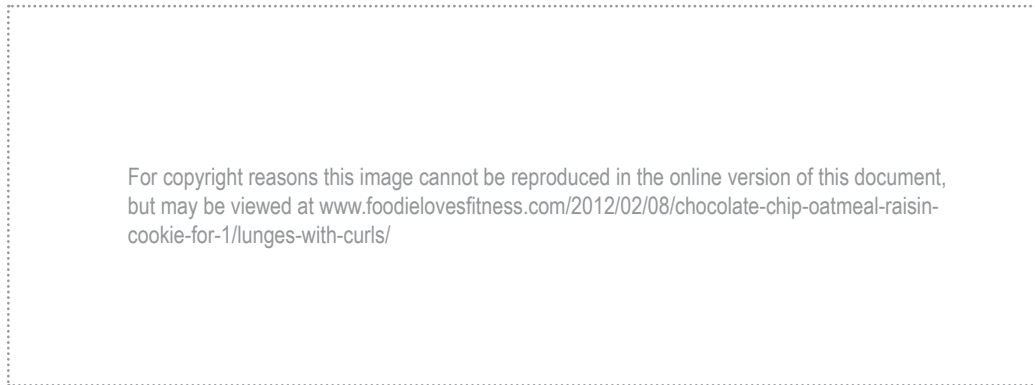
11. The player in the white socks sees her opponent attempting to block the ball. The image shows her next move to avoid this defensive tackle. In terms of the information processing model, she is demonstrating the
- (a) motor feedback phase.
  - (b) stimulus recognition phase.
  - (c) stimulus decision phase.
  - (d) motor output phase.
12. An athlete in the 'zone' is one who is in their ideal performance state when competing. Which of the following will **most** assist an athlete to get into the 'zone'?
- (a) cheering from the crowd
  - (b) receiving extra prize money for winning
  - (c) managing their level of stress
  - (d) verbal feedback from their coach

Questions 13 and 14 refer to the image below.



13. In teaching this young player the correct grip of the hockey stick, which cues is the coach giving?
- (a) visual and proprioceptive cues
  - (b) proprioceptive and verbal cues
  - (c) visual and verbal cues
  - (d) proprioceptive cues
14. The boy practises his new grip by rolling and tapping the ball with the hockey stick. The grip is classified as a
- (a) continuous motor skill.
  - (b) gross motor skill.
  - (c) fine motor skill.
  - (d) serial motor skill.
15. Which of these statements is the **least** likely description of a player at the autonomous phase of motor learning? The player
- (a) has all the time in the world to execute skills and is unflustered.
  - (b) is able to read the play, identify key cues and anticipate future events.
  - (c) acts automatically without thinking, with fast reaction time.
  - (d) requires a variety of augmented feedback from the coach in order to detect and correct errors.
16. Which of the following training activities illustrates the muscle characteristic of elasticity?
- (a) completing a series of hamstring stretch exercises at the beginning and end of training
  - (b) flexing and extending the knee joint as many times as possible with a light ankle weight
  - (c) jumping from a box and rebounding as high as one can
  - (d) completing a leg press against the heaviest weight possible

Question 17 refers to the image below.



Lunge with biceps curl

17. Which of the following order of words completes the statement correctly?

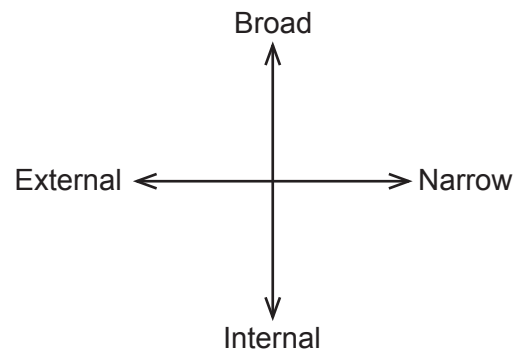
For the biceps curl exercise shown, the biceps muscle is the \_\_\_\_\_ and the triceps muscles is the \_\_\_\_\_. To return the elbow joint to the fully extended position, the \_\_\_\_\_ muscle is the antagonist and the \_\_\_\_\_ muscle is the agonist.

- (a) agonist; antagonist; biceps; triceps
  - (b) co-contractor, extensor; biceps; triceps
  - (c) agonist, co-contractor; triceps; biceps
  - (d) antagonist; agonist; biceps; triceps
18. Which of the following statements about the mechanics of breathing is correct?
- (a) Inhalation is caused by the stimulation of alveoli muscle, resulting in a vacuum in the lungs for air inflow.
  - (b) Inhalation is caused by the contraction of the diaphragm muscle, which increases the chest volume and in turn creates a negative pressure for air inflow.
  - (c) Inhalation is a passive process involving the stimulation of alveoli and the relaxation and flattening of the diaphragm muscle.
  - (d) Inhalation is a passive process involving the relaxation of the lung and alveoli tissues to open the airways for air inflow.
19. Which of the following muscle characteristics is an elite athlete, whose sport requires power and strength, likely to have?
- (a) proportionately more slow twitch than fast twitch muscle fibres
  - (b) more excitability and contractibility than extendibility
  - (c) proportionately more fast twitch than slow twitch muscle fibres
  - (d) more contractibility and extendibility than excitability

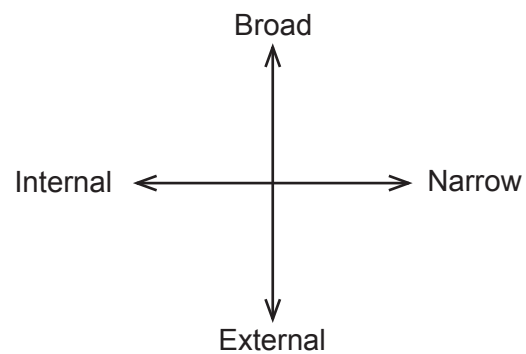


20. Which diagram below correctly represents Nideffer's model?

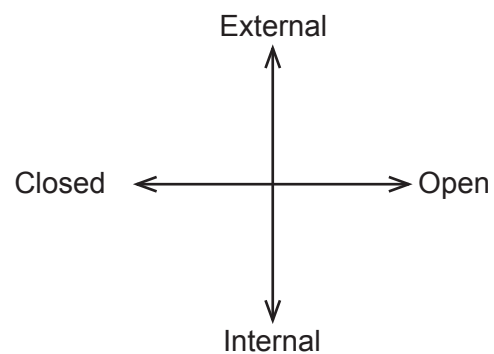
(a)



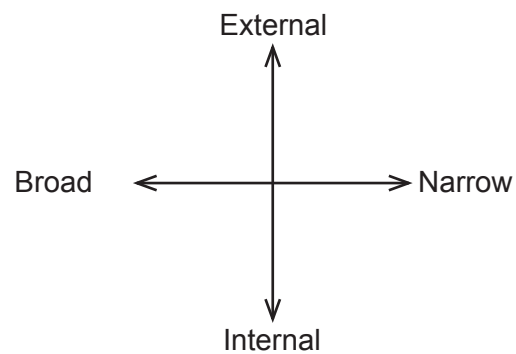
(b)



(c)



(d)



**End of Section One**

**See next page**

## Section Two: Short answer

42% (58 Marks)

This section has **10** questions. Answer **all** questions. Write your answers in the spaces provided. Wherever possible, confine your answers to the lines provided. Use a blue or black pen (**not** pencil) for this section.

Spare pages are included at the end of this booklet. They can be used for planning your responses and/or as additional space if required to continue an answer.

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- Continuing an answer: If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question that you are continuing to answer at the top of the page.

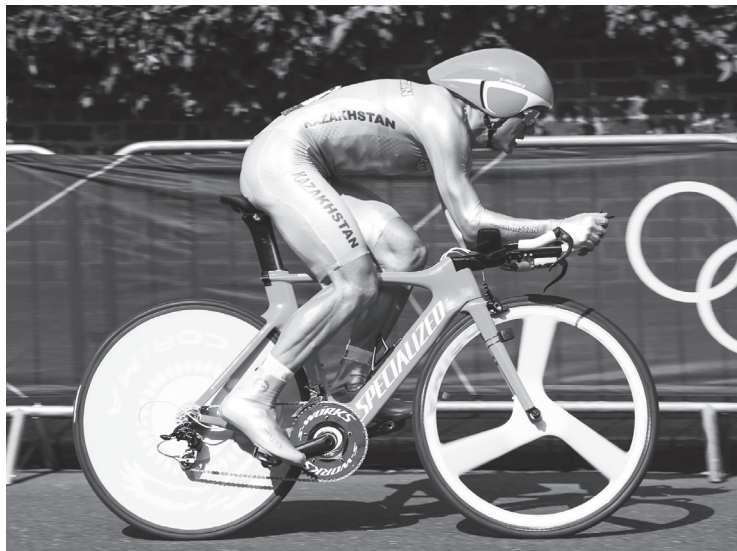
Suggested working time: 80 minutes.

## Question 21

(7 marks)

- (a) Describe the **three** forms of motion shown in this image.

(3 marks)



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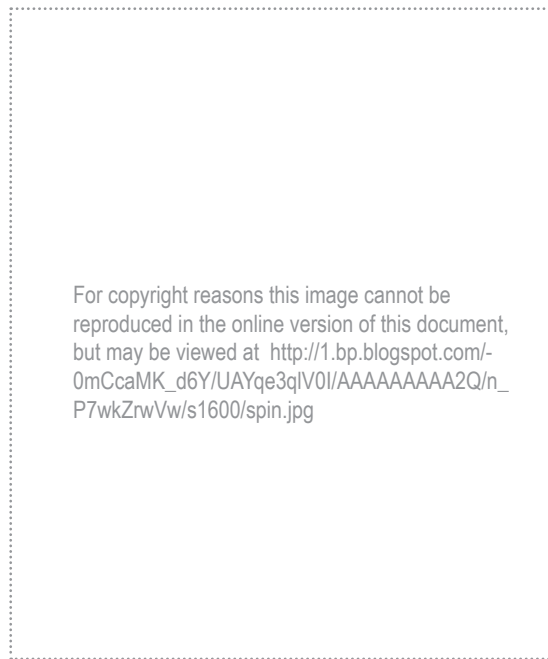
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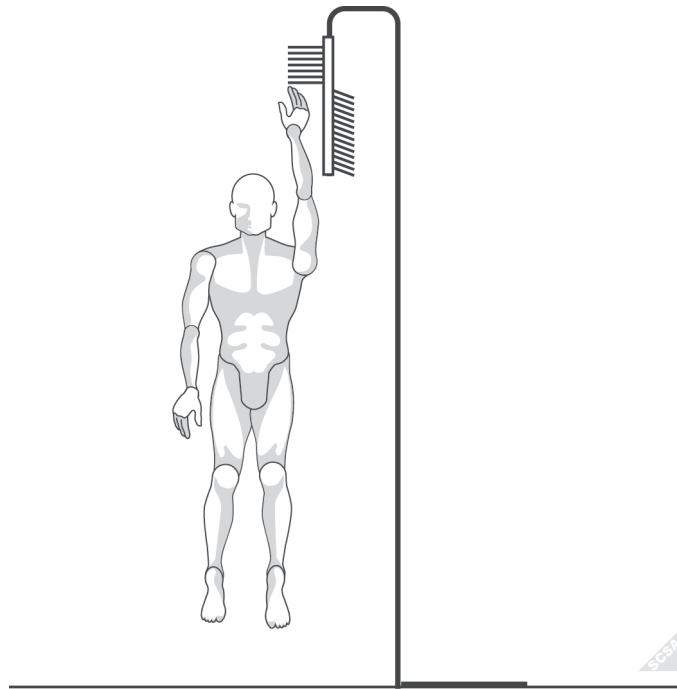
## Ice skater spinning

- (b) Name the type of balance involved in the above situation and describe **three** ways the athlete could improve her stability. (4 marks)

[illegible]

## Question 22

(3 marks)



Describe how Newton's Laws are applied in this vertical jump test situation.

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## Question 23

(6 Marks)

- (a) What principle of training is illustrated in the performance of an athlete who spends extended time away from training and competition due to injury? (1 mark)

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- (b) Define the principle of progressive overload and explain **one** way by which this principle is achieved. (2 marks)

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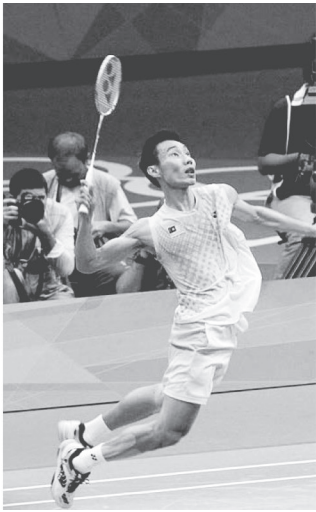
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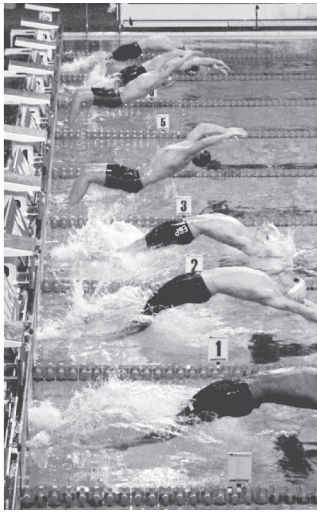
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Question 23 (continued)

- (c) Power is a fitness component athletes utilise to varying extents. Discuss the use of leg power for each athlete shown below. (3 marks)



Badminton smash



Backstroke start



Marathon runner

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## Question 24

(6 Marks)

- (a) When Lionel Messi, an Argentinian World Cup player, commences a game of soccer, changes occur to his respiratory and circulatory systems.

Provide **one** example of an immediate physiological response in his respiratory system and **one** example in his circulatory system. (2 marks)

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- (b) Explain why the respiratory and circulatory systems respond in this way. (2 marks)

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In the lead up to the World Cup in Brazil, Lionel focused on improving his cardiorespiratory endurance. In consultation with the Argentinian team's trainer, he began an exercise program designed to emphasise continuous training, rather than interval training.

- (c) Identify the key difference between continuous and interval training. (1 mark)

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- (d) Discuss how the principle of specificity could be applied in the continuous program for this athlete. (1 mark)

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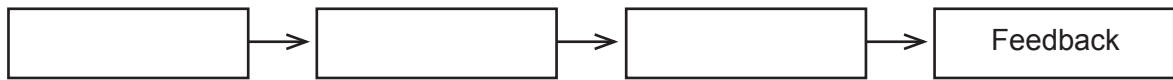
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Question 25

(6 marks)

- (a) Insert the missing labels that identify the phases of the information processing model.

(3 marks)



- (b) Using your understanding of the information processing model, explain why few teams playing on outdoor ovals choose green as the colour for their uniforms.

(1 mark)

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- (c) A junior player in the early phases of learning a sport is easily overloaded by too much information during the game. When this happens, identify **two** performance outcomes for this junior player.

(2 marks)

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## Question 26

(6 marks)

The following images show two females of different abilities throwing the javelin.

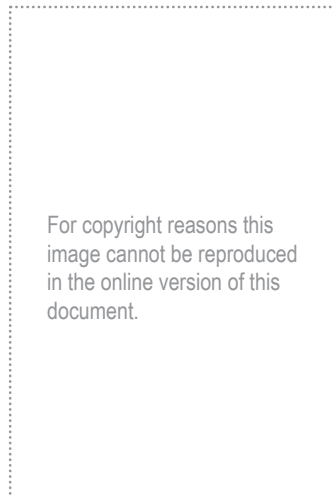


Image 1



Image 2

- (a) Identify the Fitts and Posner phase of motor learning in shown Image 1. (1 mark)

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- (b) Describe **two** features that distinguish this stage of learning from the stage represented in Image 2. (2 marks)

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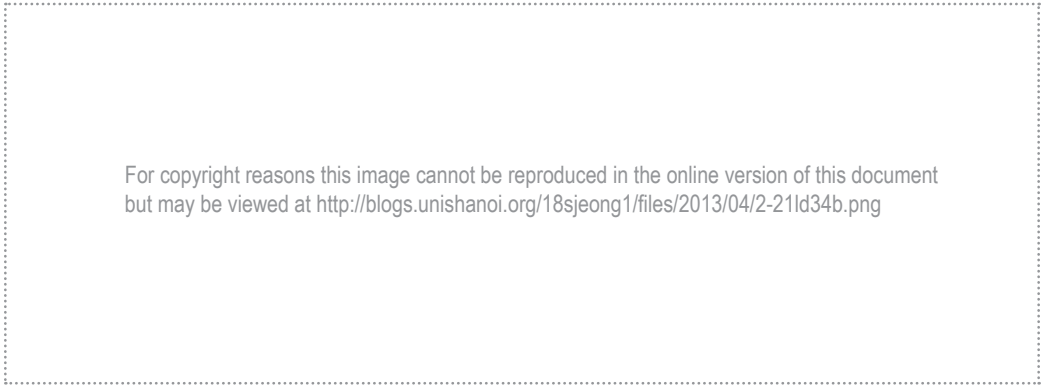
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Question 26 (continued)

- (c) In Image 1, written comments have now been added by the coach for the athlete to review between coaching sessions. Describe the forms of feedback used by the coach in this instance and state the main purpose of this feedback. (3 marks)



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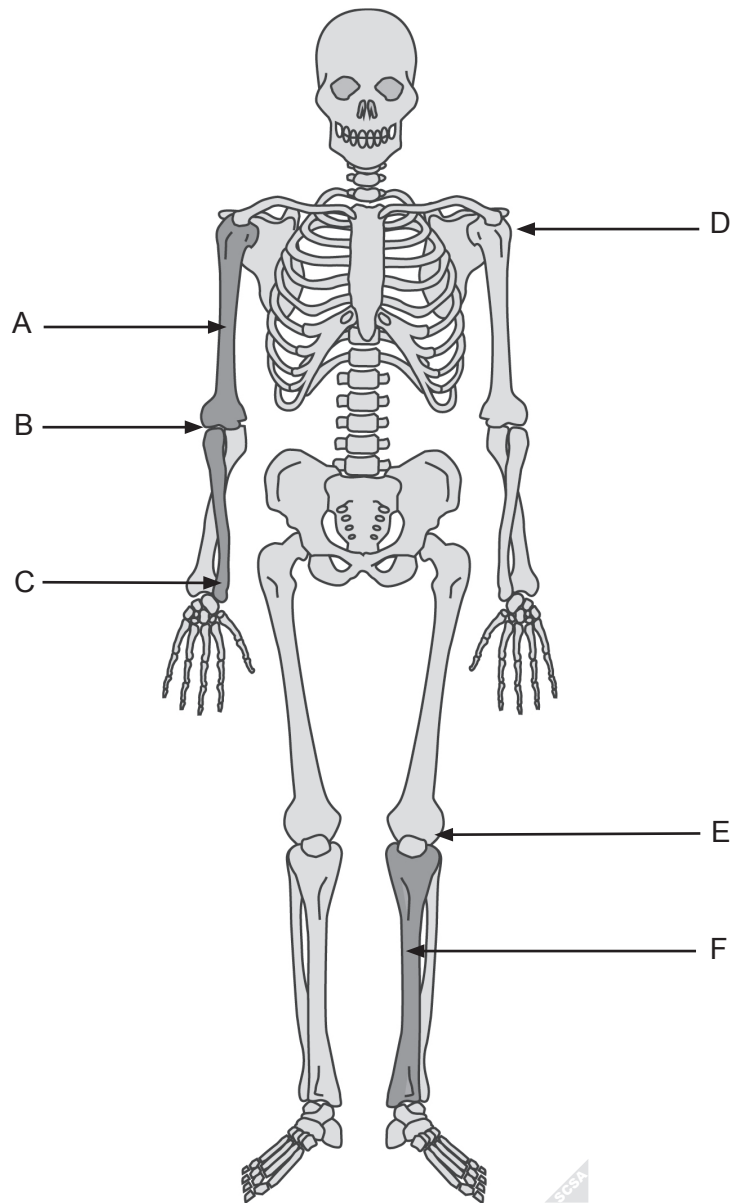
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## Question 27

(6 marks)

Using the diagram below, identify the bones and the muscles that cause movement at that joint.



A Bone: \_\_\_\_\_

B Muscle for elbow flexion: \_\_\_\_\_

C Bone: \_\_\_\_\_

D Muscle for joint abduction: \_\_\_\_\_

E Muscle for knee extension: \_\_\_\_\_

F Bone: \_\_\_\_\_

## Question 28

(6 marks)

- (a) Define the function of the circulatory system.

(1 mark)

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- (b) Consider the main structures of the circulatory system and their function. Complete the table below.

(5 marks)

Structure	Function definition
1. _____	A muscular organ that pumps blood through vessels to body tissues.
2. Arteries	<hr/> <hr/> <hr/>
3. Veins	<hr/> <hr/> <hr/>
4. _____	Very small diameter vessels that diffuse oxygen to surrounding tissues.
5. Blood	<hr/> <hr/> <hr/>

See next page

## Question 29

(6 marks)

- (a) Illustrate the relationship between self-confidence and performance on the graph below. (2 marks)



- (b) Classify the following, using the main type of attentional focus according to Nideffer's model. (4 marks)

	Attentional focus
A cricket batter scanning the field of play.	
A tennis player focusing on elbow extension.	
A basketball player jumping to gain a rebound of a failed shot.	
A hockey goalkeeper feeling nervous before a penalty shot.	

## Question 30

(6 marks)

- (a) Describe **three** mental skill strategies used to control arousal levels related to improving performance. (3 marks)

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- (b) Goals are influenced by changing motivation. For the following goals related to sport, identify the key factors influencing motivation. (3 marks)

Personal goals	Factors
Now in my forties, I want to gain muscle bulk and look fitter.	
I want to win my local A grade tennis tournament this January.	
I want to complete the Busselton Ironman event instead of the marathon.	

End of Section Two

See next page

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### Section Three: Extended answer

**14% (20 Marks)**

This section contains **four (4)** questions. You must answer **two (2)** questions. Write your answers in the spaces provided.

Spare pages are included at the end of this booklet. They can be used for planning your responses and/or as additional space if required to continue an answer.

- Planning: If you use the spare pages for planning, indicate this clearly at the top of the page.
- Continuing an answer: If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question that you are continuing to answer at the top of the page.

Suggested working time: 40 minutes.

### Question 31

**(10 marks)**

- (a) Consider two elite athletes, a track sprint cyclist and a road cyclist. In relation to their pedalling action, examine the following characteristics of skeletal muscle for each athlete.
- fibre type
  - excitability
  - contractibility
  - extendibility
  - elasticity
- (6 marks)

[illegible]

**See next page**



Regardless of whether a person is an elite cyclist or someone who enjoys going for a morning ride on the weekends, adequate nutrition is important for athletic performance. Consuming the right sources of nutrition will enhance a person's energy levels and limit the onset of fatigue.

- (b) For a person undertaking a regular, continuous training program, discuss how **three** energy sources are used by the body to improve their cycling performance and **one** consequence of **not** following correct nutrition guidelines. (4 marks)

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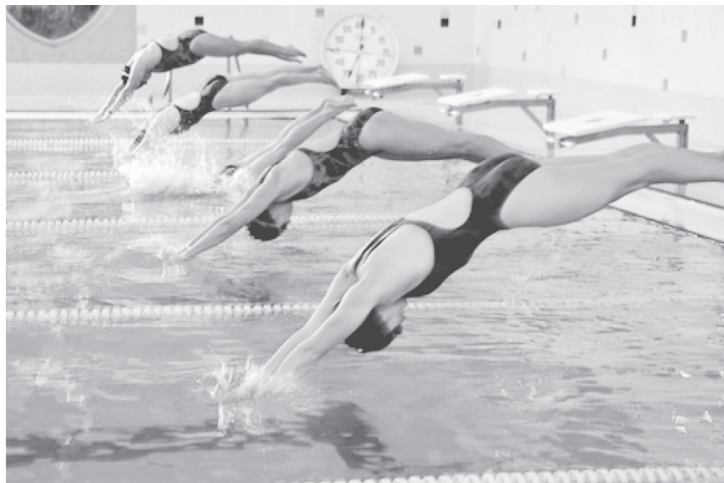
### Question 32

**(10 marks)**

- (a) Sports skills can be classified according to the size of the muscles involved, the signals/cues in the environment for control and the nature of actions in the performance. Refer to the images below and use these classification categories to compare the characteristics of (i), the tennis serve; and (ii), the racing dive off the blocks. (6 marks)



(i) Tennis serve



(ii) Racing dive off blocks

[illegible]

- (b) The images below show a badminton overhead drop shot being played, from preparation to follow through. The shuttle will angle sharply downward to just clear the net. Analyse the movement types observed at both the elbow and the forearm in performing this stroke from preparation to follow through. (4 marks)

For copyright reasons this image cannot be reproduced in the online version of this document, but may be viewed at <http://badminton.chorwong.com/badmintontechniques.html>

### Question 33

**(10 marks)**

A golfer uses their knowledge of projectile motion to vary the distance they hit the ball.

- (a) Using the three components of projectile motion, provide **two** examples for each component that (while keeping all other factors constant) will influence the distance a golf ball will travel. (6 marks)

[illegible]

**See next page**

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- This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

### Question 34

**(10 marks)**

- (a) Damian is a State grade touch football player, competing for the Southern Stars Touch Football team. At the State grade level, a game of touch football consists of two 20 minute halves. There are six players per team on the field at one time. Also, regular substitutions after approximately two minutes on the field are a critical part of the game at this level.
- (i) Consider **one** relevant characteristic of each of the energy systems Damian will utilise during a State grade game of touch football.
- (ii) Use the energy system continuum to explain how the body's energy systems are utilised during the game. (6 marks)

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Discuss **two** factors that will influence Damian's future goals. For each factor, recommend **one** way in which Damian can address its effect so he can continue to be involved in touch football at a State grade level. (4 marks)

[illegible]

Question number: \_\_\_\_\_

[illegible]



Question number: \_\_\_\_\_

[illegible]

Question number: \_\_\_\_\_

[illegible]

## ACKNOWLEDGEMENTS

### Section One

- Question 5** Romano, M.L. (2005, April 29). *Darryl Hunter side steps into position* [Image]. Retrieved January 19, 2014, from [http://commons.wikimedia.org/wiki/File:US\\_Navy\\_050429-N-7975R-001\\_Midshipman\\_4th\\_Class\\_Darryl\\_Hunter\\_side\\_steps\\_into\\_position\\_for\\_his\\_first\\_attempt\\_in\\_the\\_shot\\_put\\_event\\_at\\_the\\_Penn\\_Relays.jpg](http://commons.wikimedia.org/wiki/File:US_Navy_050429-N-7975R-001_Midshipman_4th_Class_Darryl_Hunter_side_steps_into_position_for_his_first_attempt_in_the_shot_put_event_at_the_Penn_Relays.jpg)
- Question 11** Hirschfeld, J. (n.d.). Junior field hockey [Image]. In L. Tolliver. (2006, October 31). *Maury is white hot with junior field hockey force*. Jason Hirschfeld/Special to the Virginian-Pilot. Retrieved January 13, 2014, from <http://hamptonroads.com/node/175071>
- Questions 13–14** *Field hockey skills day* [Image]. (n.d.). Retrieved January, 2014, from [http://wallersdownunder.blogspot.com.au/2011\\_02\\_01\\_archive.html](http://wallersdownunder.blogspot.com.au/2011_02_01_archive.html)
- Question 17** Adapted from: Lee, J. (n.d.). *Lunge with biceps curl* [Image]. Retrieved from [www.foodielovesfitness.com/2012/02/08/chocolate-chip-oatmeal-raisin-cookie-for-1/lunges-with-curls/](http://www.foodielovesfitness.com/2012/02/08/chocolate-chip-oatmeal-raisin-cookie-for-1/lunges-with-curls/)

### Section Two

- Question 21(a)** Diliff. [Iliff, D.]. (2012, August 1). *Alexander Vinokourov 2, London 2012 Time Trial – Aug 2012* [Image]. Retrieved April 3, 2014, from [http://en.wikipedia.org/wiki/File:Alexander\\_Vinokourov\\_2,\\_London\\_2012\\_Time\\_Trial\\_-\\_Aug\\_2012.jpg](http://en.wikipedia.org/wiki/File:Alexander_Vinokourov_2,_London_2012_Time_Trial_-_Aug_2012.jpg)  
Used under the Creative Commons Attribution-Share Alike 3.0 Unported license.
- Question 21(b)** Duomo TIPS RF. (n.d.). *Blurred action of female figure skater performing a spin* [Image]. (AGE Fotostock WR0108809). Retrieved January 13, 2014, from [http://1.bp.blogspot.com/-0mCcaMK\\_d6Y/UAYqe3qIV0I/AAAAAAAAA2Q/n\\_P7wkZrwVw/s1600/spin.jpg](http://1.bp.blogspot.com/-0mCcaMK_d6Y/UAYqe3qIV0I/AAAAAAAAA2Q/n_P7wkZrwVw/s1600/spin.jpg)
- Question 23(c)** Stanley, A. (2012, August 5). *Lee Chong Wei prepares to smash* [Image]. Retrieved January 3, 2014, from [http://commons.wikimedia.org/wiki/File:Lee\\_Chong\\_Wei\\_Prepares\\_To\\_Smash.jpg](http://commons.wikimedia.org/wiki/File:Lee_Chong_Wei_Prepares_To_Smash.jpg)  
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## Question 26

- Image 1** Adapted from: Miss Hamada. (2013, April 15). *Throwing javelin* [Image]. Retrieved January, 2014, from <http://blogs.unishanoi.org/18sjeong1/files/2013/04/2-21ld34b.png>
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