



Western Australian Certificate of Education Examination, 2013

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	11	11	80	60	42
Section Three: Extended answer	4	2	40	20	14
Total					70

Instructions to candidates

1. The rules for the conduct of WACE external examinations are detailed in the booklet *WACE Examinations Handbook 2013*. 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.

See next 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.

1. A diver coming off a platform is affected by gravity and falls at an increasing velocity when measured every second. What does that mean for the diver's acceleration?
 - (a) it is decreasing
 - (b) it is constant
 - (c) it is increasing
 - (d) it cannot be determined

2. Which of the following is an example of negative and positive acceleration?
 - (a) a high jumper after taking off and clearing the bar
 - (b) a 100 m sprinter from starting out of the blocks to the finish line
 - (c) a pole vaulter falling from above the bar
 - (d) a long jumper running before the take off board

3. All human motion is **best** described as a combination of
 - (a) linear and general motion.
 - (b) linear and angular motion.
 - (c) angular and general motion.
 - (d) angular and rotary motion.

4. Which of the following is the **best** example of general motion?
 - (a) an athlete in a wheelchair race
 - (b) a sprinter's chest moving from 0 m to 100 m in the shortest time possible
 - (c) a skier holding a crouch position sliding down a slope
 - (d) a gymnast doing a rotation around a horizontal bar

Questions 5 to 8 refer to the table below.

Event duration	Energy system	Main supply of ATP
1–4 seconds	Anaerobic	?
45–120 seconds	Anaerobic	?
5–10 minutes	?	Muscle glycogen
30 minutes	Aerobic	?

5. The main supply of ATP for 1–4 seconds of high intensity activity is
- (a) muscle glycogen.
 - (b) creatine.
 - (c) fats.
 - (d) ATP – CP.
6. The main supply of ATP for 45–120 seconds of high intensity activity is
- (a) muscle glycogen.
 - (b) creatine.
 - (c) fats.
 - (d) ATP – CP.
7. The main supply of ATP for 30 minutes of sub-maximal, low intensity activity is
- (a) muscle glycogen.
 - (b) creatine.
 - (c) fats.
 - (d) ATP – CP.
8. For an event that lasts between 5–10 minutes, the main energy system used will be
- (a) protein.
 - (b) anaerobic.
 - (c) carbohydrates.
 - (d) aerobic.
9. David Rudisha, a middle distance runner, won the 800 m men's event at the 2012 London Olympic Games. To avoid the onset of fatigue, which of the following energy sources would be the most effective if consumed in the hours before the race?
- (a) fat
 - (b) fibre
 - (c) protein
 - (d) carbohydrate

See next page

10. Which component of fitness **best** matches the definition below?
'The extent to which muscles can exert force by contracting against resistance.'
- (a) strength
 - (b) power
 - (c) muscular endurance
 - (d) agility
11. Cricket uses white balls for day-night matches and red balls for Test matches played only in daylight. In the information processing model, the use of different coloured balls is to enhance the
- (a) identification of stimulus/input phase.
 - (b) response identification/decision-making phase.
 - (c) response/output phase.
 - (d) feedback phase.

Question 12 refers to the image below.

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<http://0.tqn.com/d/gymnastics/1/0/7/4/-/-/Step3.jpg>

12. In practising the handstand the gymnast performs the action against a wall. Which type of cues is she relying on to improve her body position?
- (a) visual
 - (b) proprioceptive
 - (c) verbal
 - (d) balance

See next page

13. Helen has three older brothers and has been playing football in the backyard with them all her life. Now seven years old, she joins a soccer competition for the first time. She shows good ball control, tackling and kicking skills compared with many other children of her age who have already had one or two seasons playing the game. Which of the following demonstrates the coach's understanding of individual differences in sports skill learning?
- (a) The coach groups the seven year olds according to gender for sports practice. Helen is grouped with the girls.
 - (b) The coach mixes the children and pairs a skilled child with an unskilled child so they can help teach their partner. Helen is partnered with Fred who has difficulty trapping the ball.
 - (c) The coach divides the bigger group into three for practices according to whether they have been at soccer for one, two or three seasons. Helen is in Group One.
 - (d) When a mini game is played, the coach ensures that Helen, and other girls, have longer recovery time on the sideline because he assumes they are not fit.
14. The umpire blows her whistle for a rule infringement. According to the information processing model, in which order does an athlete process the auditory information to stop their play?
- (a) response identification/decision making; feedback; response; identification of stimuli
 - (b) identification of stimuli; feedback; response identification/decision making; response
 - (c) response identification/decision making; identification of stimuli; response; feedback
 - (d) identification of stimuli; response identification/decision making; response; feedback
15. Some muscle fibres respond rapidly and contract when they are stimulated by a low-level electrical stimulus, whereas other muscle fibres respond only when a large electrical impulse stimulates them. This characteristic of muscle response is called
- (a) contractibility.
 - (b) fibre type.
 - (c) excitability.
 - (d) reaction time.
16. Which of the following training activities illustrates the muscle characteristic of extendibility?
- (a) jumping from a box and rebounding as high as one can
 - (b) undertaking a muscle exercise program that requires the athlete to flex and extend their knee joint as many times as possible
 - (c) completing a hamstring stretch exercise
 - (d) dodging swiftly left and right between a series of marker cones as a locomotor warm-up

17. Which of the following terms complete the statement below correctly?

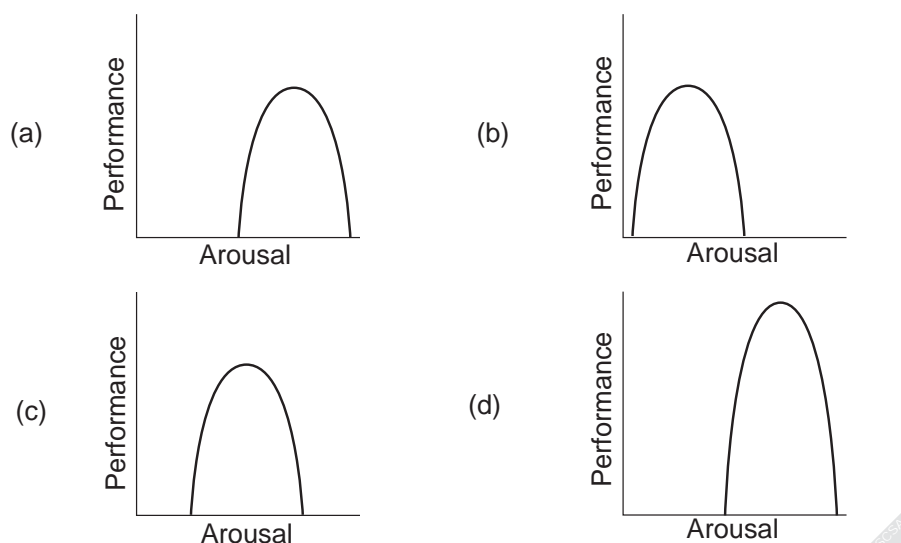
To accomplish a forward kicking action of the foot, the knee joint _____ and the hamstring muscles act as the _____ and the quadriceps muscles act as the _____.

- (a) extends, antagonist, agonist
- (b) flexes, antagonist, agonist
- (c) extends, agonist, antagonist
- (d) flexes, agonist, antagonist

18. To create ankle dorsiflexion, the insertion point of the tibialis anterior muscle is on the

- (a) Achilles' heel.
- (b) metacarpal and carpal bones.
- (c) metatarsal and tarsal bones.
- (d) carpal bones.

19. The ideal arousal curve (inverted U) for a golfer before he executes a putt is **best** represented by which of the graphs below?



20. From the age of 10, Mary has been selected for talent squads and State teams. She was an early developer and was taller, stronger and more athletic than her peers. Approaching her twenties, she is no longer the tallest or the most skilled and she is no longer selected for talent squads. Mary is considering her options in recreational sport. What situations is she taking into account in reassessing her future sport involvement?

- (a) age, skill level and type of activity
- (b) fitness, injury and type of activity
- (c) age, fitness and confidence
- (d) skill level, fitness, type of activity

End of Section One

See next page

Section Two: Short answer**42% (60 Marks)**

This section has **11** questions. Answer **all** questions. Write your answers in the spaces provided in this Question/Answer Booklet. 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.

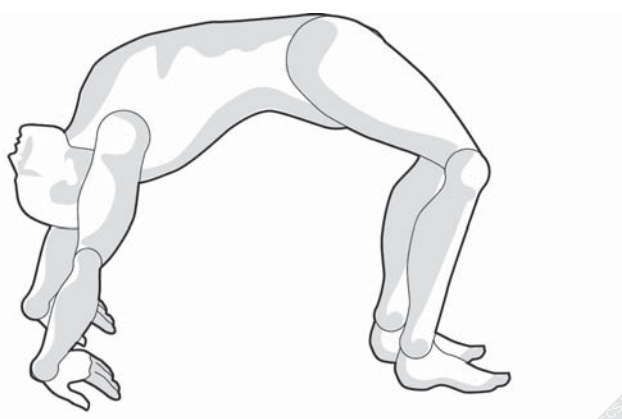
- Planning: If you use the spare pages for planning, indicate this clearly at the top of the page.
- Continuing an answer: If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question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

Suggested working time: 80 minutes.

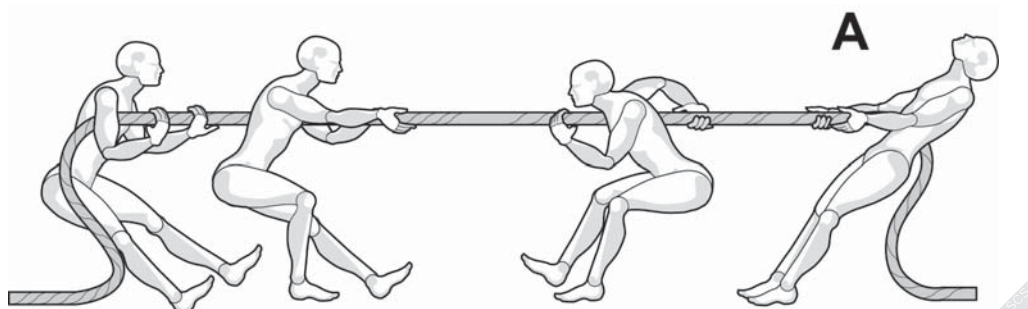
Question 21**(4 marks)**

With respect to the principle of balance

- (a) (i) draw with an (X) the approximate position of the centre of gravity. (1 mark)

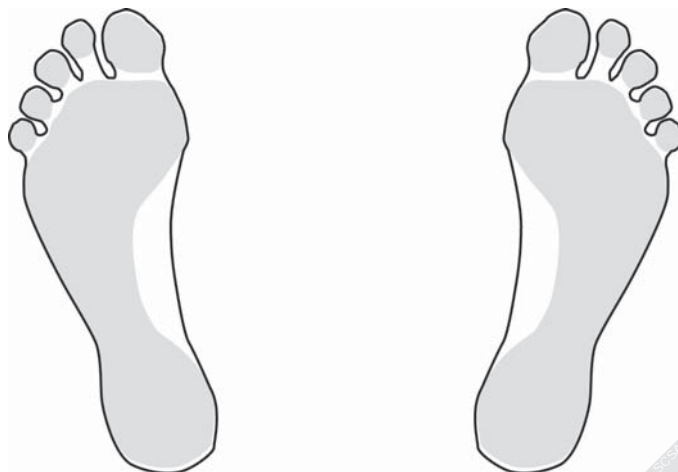


- (ii) draw the line of gravity for Person A. (1 mark)



See next page

- (b) State **two** ways by which an athlete could decrease their base of support if this was their starting position. (2 marks)

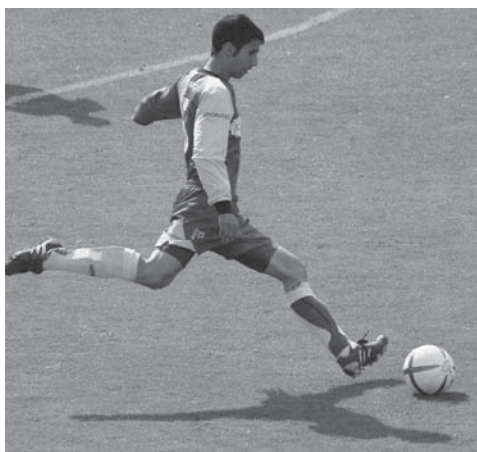


One: _____

Two: _____

Question 22

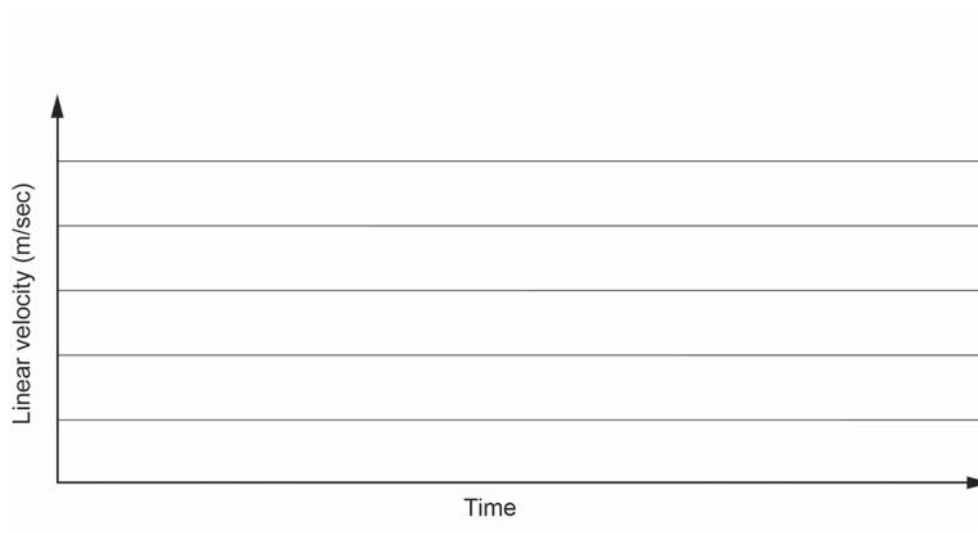
(6 marks)



In building foot speed to kick the ball, the hip, knee and ankle are used.

- (a) Classify what type of movement this is from the coordination continuum. (1 mark)

- (b) On the graph below, draw and label the optimal timing of the action of the hip, knee and ankle joints for maximum foot velocity, when kicking the ball. (3 marks)



See next page

- (c) Describe the **two** biomechanical factors that would maximise the velocity of impact with the ball. (2 marks)

One:

Two:

Question 23

(6 marks)

After a period of eight weeks of regular, programmed training an athlete's body will develop long-term adaptations. For the circulatory system identify **three** of these adaptations and describe how an athlete's body will have adapted over the duration of the training program.

Adaptation	Description
One: <hr/>	<hr/> <hr/>
Two: <hr/>	<hr/> <hr/>
Three: <hr/>	<hr/> <hr/>

See next page

Question 24

(6 marks)

The table below identifies the relationship among fitness components, training types and training principles.

Consider a professional squash player and answer the following.

- (a) For cardio-respiratory endurance, circle the **most** correct training type and identify the **most** relevant training principle.
- (b) For power, circle the **most** correct training type and identify the **most** relevant training principle.
- (c) For agility, identify the **most** correct training type and circle the **most** correct training principle.

Fitness Component	Training Type	Training Principle
Cardio-respiratory endurance	<i>(Circle the most correct one)</i> Circuit Flexibility Resistance	 (a) _____
Power	<i>(Circle the most correct one)</i> Circuit Flexibility Resistance	 (b) _____
Agility	 (c) _____	<i>(Circle the most correct one)</i> Progressive overload Specificity Reversibility

Question 25

(6 marks)

The image below shows the low or short serve in badminton. Classify this skill by answering the questions below.



Badminton low or short serve

- (a) Is this a fine or gross motor skill? _____ (2 marks)

Justify your classification.

- (b) Is this a closed or open motor skill? _____ (2 marks)

Justify your classification.

- (c) Is this a discrete, serial or continuous motor skill? _____ (2 marks)

Justify your classification.

See next page

Question 26**(4 marks)**

Feedback from a coach is critical in improving a player's performance. It is acknowledged that feedback serves two purposes. Using a sport of your choice, identify each purpose and provide an example.

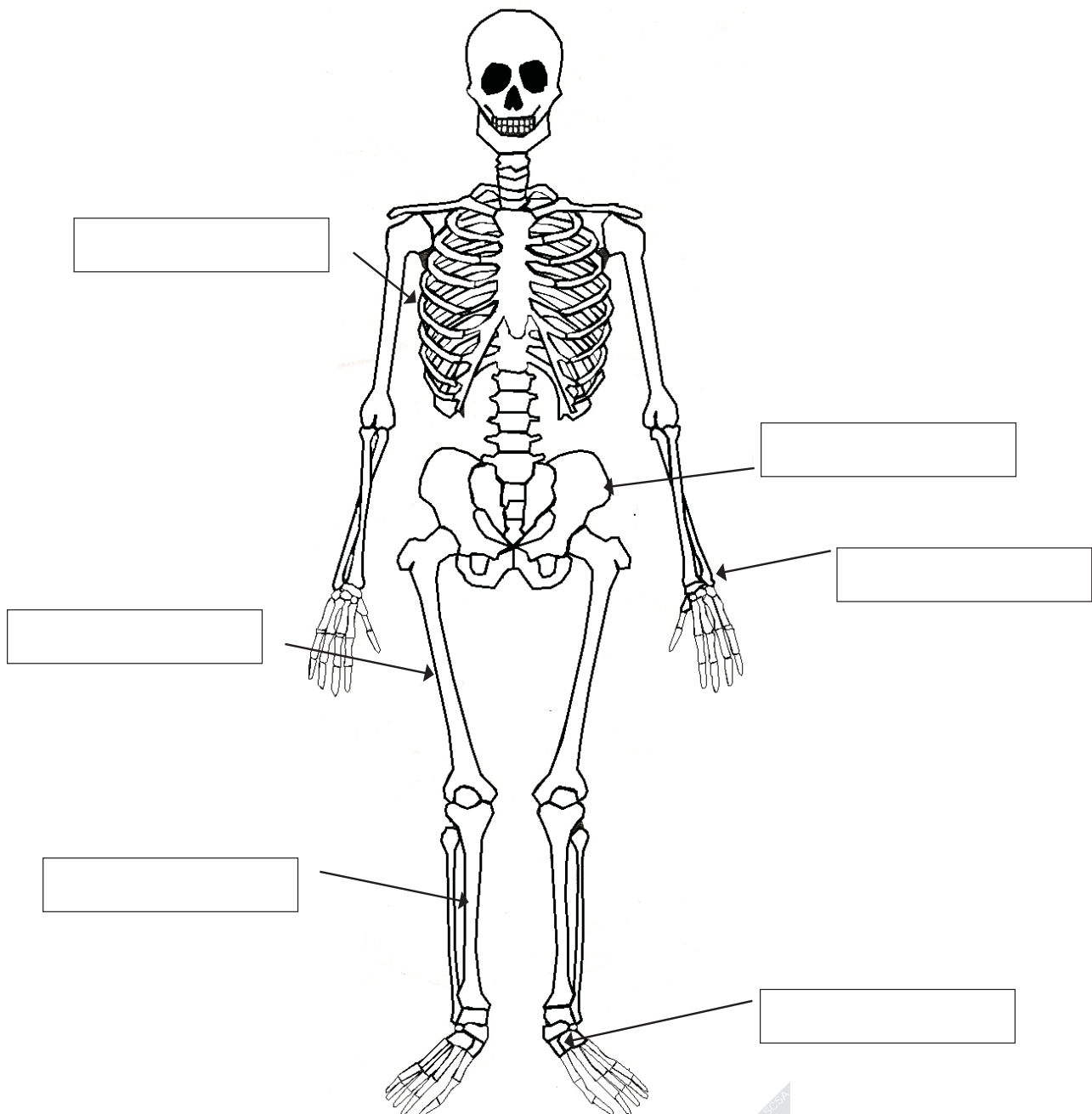
Sport _____

Purpose and example one:

Purpose and example two:

Question 27

(6 marks)

Label the **six** bones on the diagram below.

See next page

Question 28

(6 marks)

The diagrams below indicate the mechanics of breathing.

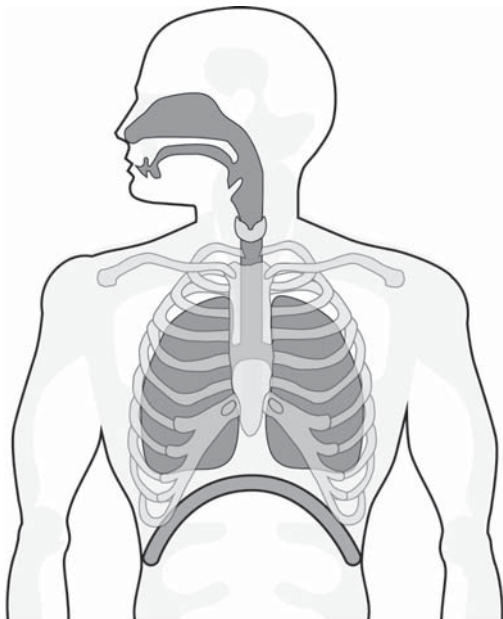


Diagram 1

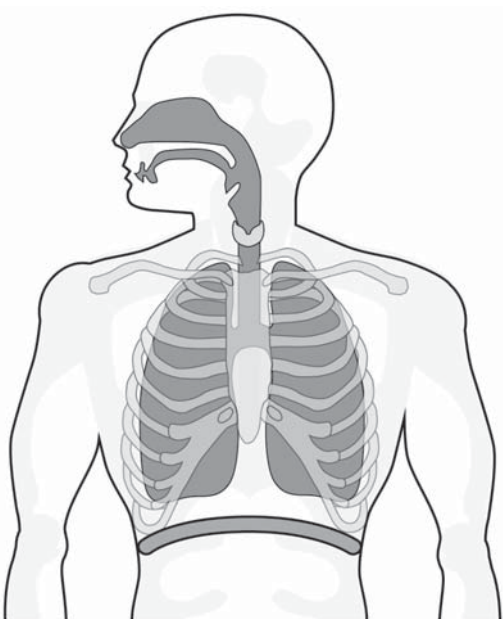


Diagram 2

- (a) Match each of the following labels to the correct diagram number. (3 marks)

	Diagram number
(i) Exhalation phase	
(ii) Diaphragm contracting	
(iii) Rib cage expanding	

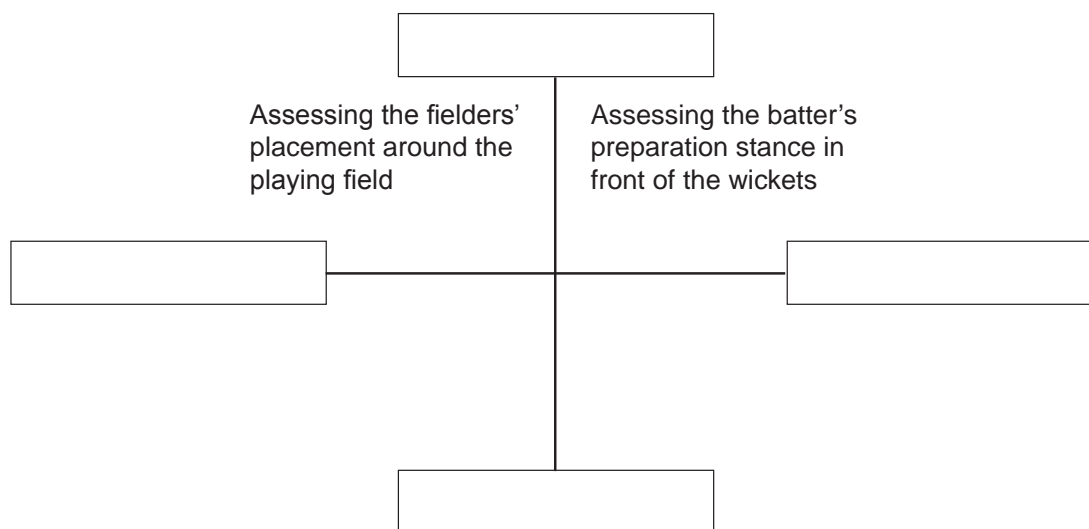
- (b) Explain the actions of the diaphragm muscle and the rib cage during inhalation in a deep breath. (3 marks)

Question 29

(6 marks)

Elite cricketer Mitchell had lost his form in fast bowling and was being inconsistent, losing pace and was having an increased number of illegal deliveries. Adverse comments from the crowd and media and conflicting advice were eating at his confidence. Over the off-season, his coach went back to basics to 'simplify' his action. He drilled into Mitchell a simple phrase, TUFF – focus on Target, stand Up, Front arm and Follow through. Each letter was a trigger to help him correct an element of his bowling that had gone off-line. The coach has applied Nideffer's model in this situation.

- (a) Taking into account the situations stated in the diagram below, label the ends of each line in accordance with Nideffer's model. (2 marks)



- (b) By applying Nideffer's model, the coach was attempting to improve one particular mental skill in Mitchell. Name this skill. (1 mark)

- (c) On the diagram above, mark with 'X' the area in which the 'TUFF' phrase should be located. (1 mark)

- (d) Justify your choice of location for 'X' in this model. (2 marks)

Question 30

(6 marks)

Motivation is one essential ingredient for participation in sport.

- (a) Define the term 'motivation' as it applies to sport performance. (1 mark)

- (b) Insert the terms that correctly complete the following statement. (2 marks)

Players who play long term regardless of whether their team is successful or not, demonstrate _____ motivation, whereas players who drop out if they do not win awards demonstrate _____ motivation.

- (c) You hear a soccer coach of unskilled seven year olds say, "Next season, I am going to introduce best player and highest possession getter awards every match. That will really motivate them to lift their game!" In terms of motivation and age, give **two** reasons why such an approach is not appropriate for such young teams and give **one** suggestion for a better approach to boosting motivation. (3 marks)

Reason

One: _____

Two: _____

Suggestion:

Question 31**(4 marks)**

Using examples, identify and describe the **two** types of feedback an Australian hockey player would use during an international game of hockey.

One:

Two:

End of Section Two

See next page

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.

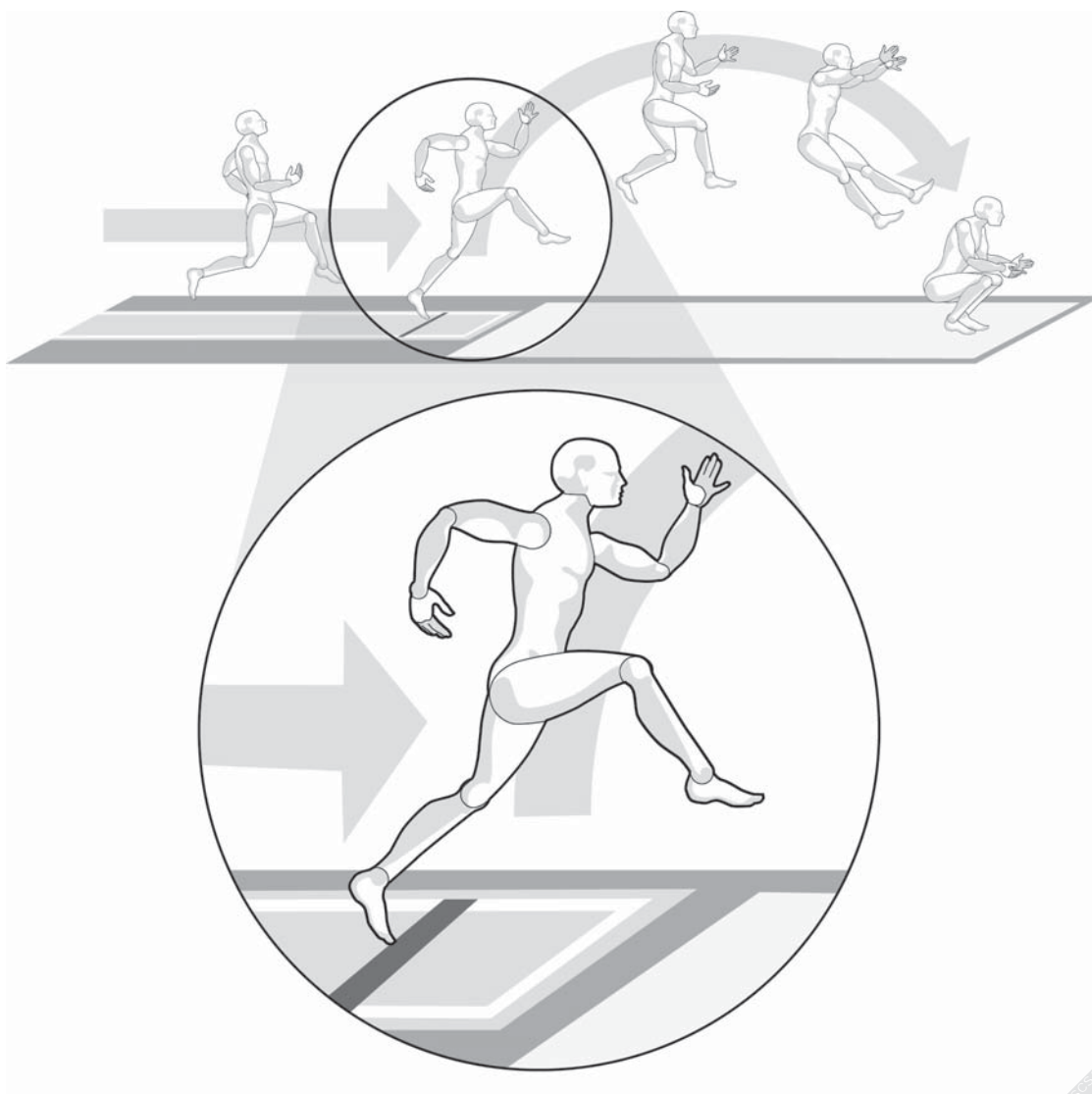
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Suggested working time: 40 minutes.

Question 32**(10 marks)**

- (a) Define Newton's three laws of motion. Demonstrate your understanding of these laws in relation to long jump when the foot is in contact with the take-off board. (6 marks)



See next page

Question 32 (continued)

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See next page

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- This image shows a single sheet of white paper with horizontal blue or grey 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.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears to be a standard notebook page or a sheet of stationery.

Question 34

(10 marks)

The following images show netball players attempting a goal shot.



Image 1

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<http://nz.sports.yahoo.com/netball/news/article/-/15343657/shooterplays-down-role-in-history/>

Image 2

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Image 3

- (a) Name the Fitts and Posner learning stage represented by the goal shooter in Images 2 and 3. Other than the quality of motor coordination of each player, describe **two** characteristics of each stage that a coach would need to consider when instructing these players. (6 marks)

See next page

(b) Observe how the netballer in Image 1 is using her legs and arms during the shooting action. Her objective is to release the ball as high as possible. For both the elbow and knee joints, name the muscles and describe the type of movement at these joints in order to produce a high ball release. (4 marks)

Question 35

(10 marks)

- (a) Demonstrate your knowledge of the respiratory and circulatory systems by explaining the correct pathway an oxygen molecule would travel from inside the lungs to the capillaries of the working muscle. Your answer must include **six** functional anatomy structures.

(6 marks)

- (b) This oxygen pathway is repeated many times with physical activity. Explain **four** immediate responses of the respiratory system to physical activity. (4 marks)

End of questions

Question number: _____

This image shows a full page of blank, lined paper. It features approximately 20 horizontal blue or grey lines spaced evenly apart, typical of notebook paper. The lines extend across the entire width of the page, leaving small margins at the top and bottom. There are no vertical lines, text, or other markings on the page.

Question number: _____

This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings on the page.

ACKNOWLEDGEMENTS

Section One

- Question 12** Tribble, P. (2008). *Handstand* [Image]. Retrieved January 2, 2013, from <http://0.tqn.com/d/gymnastics/1/0/7/4/-/-/Step3.jpg>

Section Two

- Question 22** tutu55. [Garrido, M.]. (n.d.). *Soccer kick* (Stock.XCHNG image ID 528614). Retrieved December 19, 2012, from <http://omegaalpha.ca/pictures/content/soccer%20kick.jpg>
- Question 25** Lange, A. (n.d.). *Badminton low serve* [Image]. Retrieved December 28, 2012, from www.birdievents.com/badminton-tips-trainings/short-serve-is-the-essence-in-badminton.html

Section Three

- Question 34
Image 1** Stevens, S. (n.d.). Altitude goal [Image]. In Hard-fought games as netball finals near. (2008, July 28). *Otago Times*. Retrieved December 28, 2012, from www.odt.co.nz/the-regions/central-otago/15248/hard-fought-games-netball-finals-near
- Image 2** Image from: Shooter plays down role in history. (2012, November 9). *Yahoo! Sport New Zealand*. Retrieved December 28, 2012, from <http://nz.sports.yahoo.com/netball/news/article/-/15343657/shooter-plays-down-role-in-history/>
- Image 3** Callow, D. (n.d.). Minister for the Status of Women, Julie Collins, tried to shoot over Melbourne Vixens defender Geva Mentor [Image]. In *Netball community says no to violence against women* [Media release]. (2012, March 7). Retrieved January 2, 2013, from www.netball.asn.au/newsitem.asp?id=31482&orgID=1

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