ACHPER Australia Western Australia Branch Inc.

ATAR course examination, 2020

Question/Answer booklet

YEAR 11
PHYSICAL EDUCATION STUDIES

Student Name: _____

Number of additional answer booklets used (if applicable):	

Time allowed for this paper

Reading time before commencing work: ten minutes
Working time: two and a half hours

Materials required/recommended for this paper

This Question/Answer booklet
Multiple-choice answer sheet

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 this examination

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 material. If you have any unauthorised material with you, hand it to the supervisor **before** reading any further.

Structure of the examination

The Physical Education Studies ATAR course examination consists of a written component and a practical (performance) component.

Structure of this paper

Section	Number of questions available	Number of questions to be answered	Suggested working time (minutes)	Marks available	Percentage of written examination
Section One Multiple-choice	20	20	30	20	20
Section Two Short answer	10	10	70	67	50
Section Three Extended answer	4	2	50	30	30
				Total	100

Instructions to candidates

1. The rules for the conduct of the Western Australian external examinations are detailed in the *Year 12 Information Handbook 2020*. Sitting this examination implies that you agree to abide by these rules.
2. Write your answers in this Question/Answer booklet preferably using a blue/black pen. Do not use erasable or gel pens.
3. 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.

   Section Two: Write your answers in this Question/Answer booklet. Wherever possible, confine your answers to the line spaces provided.

   Section Three: Consists of four (4) questions. You must answer two (2) questions. Write your answers in this Question/Answer booklet.
4. You must be careful to confine your answers to the specific questions asked and to follow any instructions that are specific to a particular question.
5. Supplementary pages for the use of planning/continuing your answer to a question have been provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

See next page

Section One: Multiple-choice **20% (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. Do not use erasable or gel pens. 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. Which of the following is not a component of blood?
   (a) Platelets
   (b) Red blood cells
   (c) Plasma
   (d) Oxygen

2. Year 7 students are learning to throw a discus for the first time. The teacher explains the discus throwing technique and gives students four key phrases to remember whilst performing the technique. The teacher prompts the students with the four key phrases as they go. The teacher is providing the students with:
   (a) visual cues
   (b) visual and proprioceptive cues
   (c) verbal cues
   (d) proprioceptive cues.

3. A golfer has accidentally hit the ball into a deep bunker. A bunker is a course hazard consisting of a hole or depression filled with sand. In order to get the ball back onto the fairway (or green) the golfer will need to hit the ball with:
   (a) an increased angle of release
   (b) a decreased angle of release
   (c) an increased height of release
   (d) a decreased height of release.

4. A 1500m runner started a race on a 400m track. Due to injury they stop after only completing half of the laps. The runner's displacement and distance would be:
   (a) 50m; 750m
   (b) 750m; 750m
   (c) 750m; 50m
   (d) 150m;750m.

See next page

5. After a three-month training program which included a significant amount of fartlek training, an adaptation the body would not experience would be:

   (a) increased respiratory rate

   (b) increased stroke volume

   (c) increased capillarization

   (d) increased heart rate.

6. Prior to a round of golf a player is feeling nervous and underprepared. Which of the following could they do to 'get in the zone'?

   (a) Listen to calming music.

   (b) Think about the previous mistakes they made so they don't make the same mistake again.

   (c) Focus on being the winner.

   (d) Listen to advice from the crowd.

7. Cycling a bike is an example of:

   (a) general motion

   (b) circular motion

   (c) linear motion

   (d) forceful motion.

8. Which of the following order of words completes the statement correctly?
   During the execution stage of a javelin throw:

   (a) the bicep is the agonist and tricep is the antagonist

   (b) the tricep is the agonist and bicep is the antagonist

   (c) the tricep is the antagonist and pectorals are the agonist

   (d) all muscles work together at the same time for a powerful throw.

9. Increased rate of diffusion at the muscles results in:

   (a) an increase in the amount of oxygen diffusing to the muscle cells from the alveoli

   (b) an increase in the amount of carbon dioxide diffusing out of the blood into the muscle cells

   (c) an increase in the amount of oxygen diffused into the muscle cells from the blood

   (d) a decrease in the amount of carbon dioxide diffused out of the muscle cells to the blood cells.

10. When comparing a trained athlete to an untrained athlete, an untrained athlete will have:

    (a) a higher stroke volume at rest and during maximal exercise

    (b) a lower stroke volume at rest and during maximal exercise

    (c) a lower heart rate at rest and during maximal exercise

    (d) a lower cardiac output at rest and during maximal exercise.

See next page

11. In the marathon event at an Olympic Games, two competitors enter the stadium together, and the final sprint will decide the gold and silver medals. Which energy system is providing most ATP in the final sprint down the straight to the finish line?
    (a) The ATP-PC system
    (b) The aerobic energy system
    (c) The Lactic acid system
    (d) The anaerobic glycolysis system

12. The ATP-PC system is the quickest to supply energy because it:
    (a) involves the least complex chemical reactions to split PC
    (b) has plenty of stored ATP
    (c) doesn't need oxygen
    (d) splits ATP with the greatest of ease.

13. Fats can produce more ATP than carbohydrate but are:
    (a) more oxygen dependent
    (b) less oxygen dependent
    (c) easier to break down
    (d) quicker to break down.

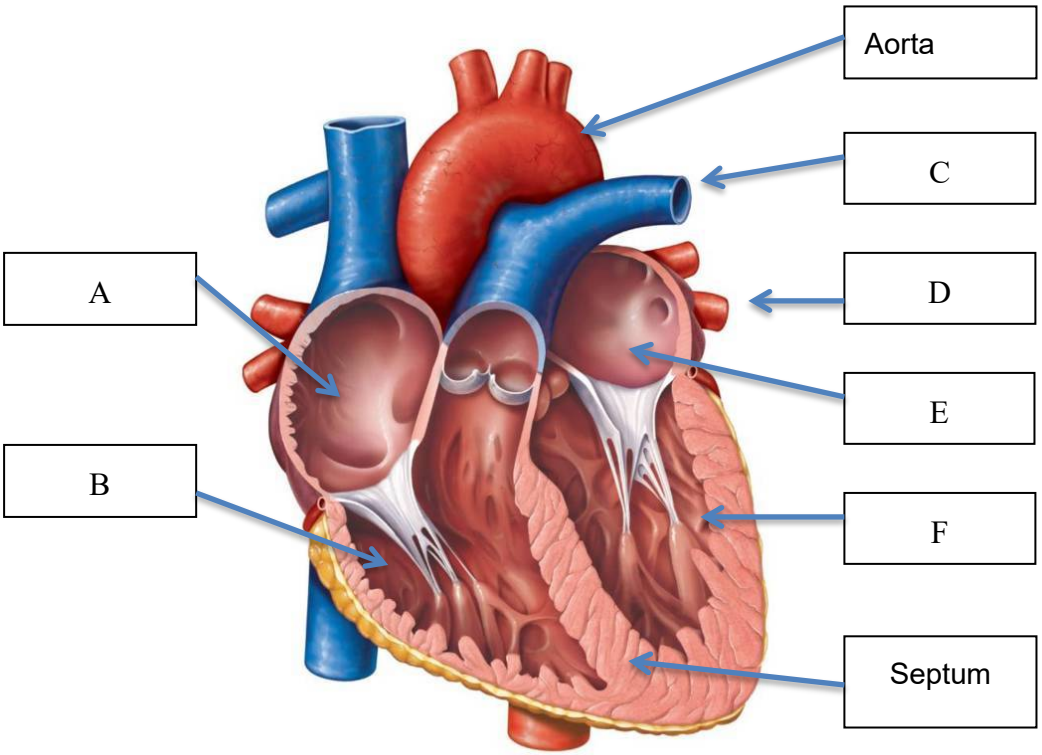
14. Following a 1500m race, which energy system would take the longest to recover fully?
    (a) ATP-PC system
    (b) Anaerobic glycolysis
    (c) Respiratory system
    (d) Aerobic energy system

15. The predominant fitness component required for a successful performance in a high-bar gymnastics routine is:
    (a) anaerobic capacity
    (b) aerobic capacity
    (c) muscular strength
    (d) muscular power.

16. The method of training most suited to an athlete who competes in shot put would be:
    (a) plyometrics
    (b) fartlek training
    (c) circuit training
    (d) interval training.

See next page

17. Which of the following correctly identifies the structure of the heart?



(a) A: right atrium, B: right ventricle, C: pulmonary artery, D: pulmonary vein, E: left atrium, F: left ventricle.

(b) A: right ventricle, B: right atria, C: pulmonary artery, D: pulmonary vein, E: left ventricle, F: left atria.

(c) A: right atrium, B: right ventricle, C: pulmonary vein, D: pulmonary artery, E: left atrium, F: left ventricle.

(d) A: left atrium, B: left ventricle, C: pulmonary vein, D: pulmonary artery, E: right atrium, F: right ventricle.

18. Which type of attention would be used by a fast bowler preparing to run in to bowl to the batsmen?

(a) Broad-external focus

(b) Narrow-internal focus

(c) Broad-internal focus

(d) Narrow-external focus

See next page

19. Skills appear on a continuum ranging from open to closed. Which of the following would be considered most 'closed'?

(a) Playing a game of netball

(b) Surfing an open ocean break

(c) Archery

(d) Golf swing

20. Newton's 2nd law suggests that acceleration is dependent on the:

(a) mass of the object and the force applied

(b) initial and final velocity of an object

(c) change in momentum

(d) equal and opposite reaction

End of Section One

See next page

Section Two: Short answer **50% (67 Marks)**

This section has **10** questions. Answer **all** questions. Write your answers in the spaces provided.

Use a blue or black pen (**not** pencil) for this section.

Supplementary pages for the use of planning/continuing your answer to a question have been provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 70 minutes.

Question 21 **(12 marks)**

(a) Name the muscles on the hurdler labeled A to E below: (5 marks)

A - _____

B - _____

C - _____

D - _____

E - _____

(b) A hurdler would benefit from having predominantly which type of muscle fibre? Explain your answer. (3 marks)

_____

_____

_____

_____

(c) Identify **two** joint movements at the hip and knee for both the trail leg and lead leg of the above pictured hurdler (4 marks)

Question 22 **(9 marks)**

The 'bend back' is a gymnastic movement which requires a significant amount of flexibility and strength to perform well.

(a) Using the picture above identify and draw the location of the gymnasts 'Centre of Gravity' as well as the 'Line of Gravity'. (2 marks)

(b) Human beings do not remain fixed in the anatomical position and therefore the precise location of the 'Centre of Gravity' changes constantly with every new position of the body and limbs, including 'bend backs'. Discuss this statement and make reference to the above picture. (4 marks)

(c) Using the picture above of the movement of the bend back, explain how muscles work in pairs. In your answer refer specifically to **one** of the limbs. (3 marks)

Question 23 **(8 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)

(c) Describe the **two** biomechanical factors that would maximize the velocity of impact with the ball.

Biomechanical factor one (2 marks)

Biomechanical factor two (2 marks)

Question 24 **(8 marks)**

When 2019/2020 Iron woman champion, Lana Rogers, commences a race changes occur to her respiratory and circulatory systems.

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

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

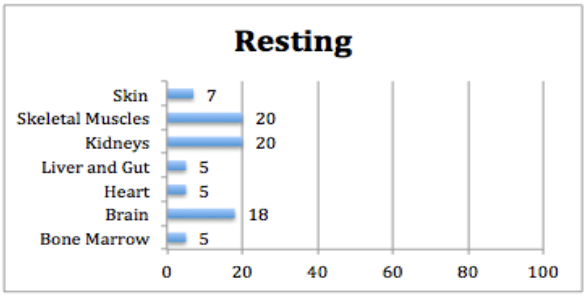
Question 24 Continued

In the lead up to 2019/2020 competition season, Lana focused on improving her cardiorespiratory endurance. In consultation with her coach and trainer, she began an exercise program designed to emphasise continuous training, rather than interval training.

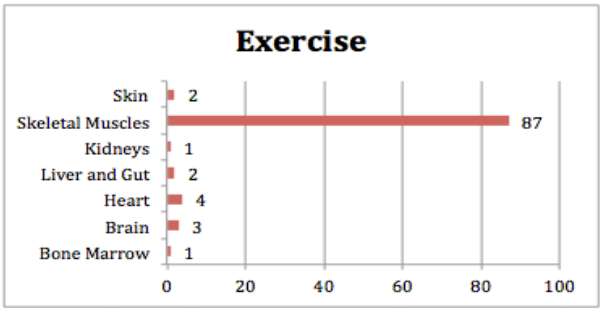
(c) Identify the key difference between continuous and interval training. (1 mark)

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

The graph below shows the effect that exercise has on the percentage distribution of blood to different systems of the body for Lana Rogers.



% blood flow to various organs (Total: 5L per min)



% blood flow to various organs (total: 25L per min)

(e) Outline how and why blood is distributed away from major organs to working muscles as exercise intensities increase. (2 marks)

Question 25 **(4 marks)**

Professional Volleyball player Matey Kaziyski of Bulgaria, on average, will spike the ball at 130km/h. Explain Newtons 1st and 2nd laws of motion as applied on the above picture of a spike.

Question 26 **(5 marks)**

Two athletes have been asked by their coach to share what they consume prior to a club basketball game which generally last for 90 mins.

Athlete 1
2 hours before the game • *Half a pepperoni pizza* • *Can of coke zero* • *Apple* *30min before the game* • *Mars bar*

Athlete 2
3 hours before • *Fried rice with vegetables and ham* • *500ml water* *1 hour before* • *banana smoothie with no fat milk*

Using your knowledge of fuel sources, compare the two athletes pre-game meal preparations. Assuming both athletes are at the same fitness level which one would fatigue quicker due to their pre-game meal? Use your understanding of macro-nutrients to explain why?

Question 27 **(6 marks)**

(a) Explain what is meant when an athlete says they are 'in the zone'. (2 marks)

(b) Using the Inverted U Hypothesis, draw a diagram depicting the Optimal Arousal Zone for a sport of your choice.

Sport: _____

Diagram (1 mark)

(c) Describe the Inverted U Hypothesis in relation to arousal. (3 marks)

Question 28 **(9 marks)**

The following workout plan was given to Amber, a surfer who was seeking to improve her fitness.

Exercise / Movement	Rest	Reps	Tempo	Sets
Front Squat	↓	12	211	3 → 5
1 Arm Cable Push	90-120sec	12-8 Progress over time	111	3 → 5
Bulgarian Split Squat	↓	12+	Strict Control	3→4
Barbell / Dumbbell Bent Row	↓	15	222	3→4
Stability Ball JackKnife with Pushup	120-150sec	-2	Strict Control	3→4
Dynamic Cable Chop (leg weight shift)	45-60sec	12	111	2→4
Stability Ball Alternating Superman	30-45sec	4/side	S.man- 10sec holds	2→3

(a) Would you recommend this workout for a surfer? Include your reason.

(1 mark)

(b) List **two** training methods included in this program. (2 marks)

(c) Explain **three** specific adaptations you would expect to see after using this program for 8 weeks. (6 marks)

Question 29 **(3 marks)**

(a) What stage of learning would you expect the children in the picture above to be in? (1 mark)

(b) Briefly outline the type of feedback these children would most benefit from. (2 marks)

Question 30 **(3 marks)**

Jack Darling of the West Coast Eagles tells you that he has been using imagery to improve goal kicking. But he says it has made him worse at set shots. Having asked what does he imagine, he says: “When I am running in to kick at goal, I mentally rehearse and see how I don’t want things to go, then I imagine a good kick while I am kicking it”. What advice do you have for Jack on his use of imagery? (3 marks)

End of Section Two

Section Three: Extended answer **30% (30 Marks)**

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

Supplementary pages for the use of planning/continuing your answer to a question have been provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 50 minutes.

Question 31 **(15 marks)**

Kenyan Athletes are well known to be leaders in middle to long distance running events. The 'High Altitude Training Centre' in Kenya is considered one of the best in the world for those looking to improve performance of their cardio respiratory system. Many athletes are unable to travel to Kenya to train but are still able to promote positive adaptations using specific training methods.

(a) Identify **three** training methods a 1500m runner could use to develop positive adaptations and describe specific adaptations you would expect to see for each training method. (9 marks)

(b) Identify **three** fitness tests to measure the dominant components of fitness which are required in 1500m runners. Discuss why they suit 1500m runners. (6 marks)

Question 32 **(15 marks)**

Andrew Gaff

Jack

Andrew Gaff is a player on the West Coast Eagles team in the AFL. He has been selected in multiple All Australian teams and won club Best and Fairest awards.
Jack is a 6-year old AusKick player who is in his first year of playing for a team.

(a) Suggest the stage of learning each of these AFL players would be in and outline two characteristics of each stage. (6 marks)

(b) Using the Information Processing Model, discuss how the on-field experiences would differ between Andrew and Jack. (9 marks)

Question 33 **(15 marks)**

The 'Tour De France' is one of the world's most famous cycling events. It takes place annually in France and consists of 21 day-long segments called stages, covering approximately 3500km.

(a) Riders of the 'Tour De France' 'typically use bicycles made of carbon fibre as they are extremely lightweight compared to an aluminium frame. With reference to **one** of Newtons Laws, explain why cyclists will benefit from using a bicycle that has a very light frame.

(3 marks)

(b) The 'Tour De France' is an extremely challenging event, both physically and mentally. Riders continually push their bodies to the limit over 21 days. Mental skills play a very important role in the riders' success.

Discuss **three** strategies that a rider could use to manage mental issues such as motivation, concentration and arousal.

(6 marks)

(c) Throughout the race the riders will use **three** (3) different energy systems. Discuss the fuels needed to be consumed by the rider to ensure each energy system performs at peak levels. (6 marks)

Question 34 **(15 marks)**

The image below shows the movements of a volleyball player as they perform a serve. The aim of the serve is to hit the ball across court into the opponents service box. The faster the ball travels, the less time the opponent has to react.

(a) With reference to 'base of support' and 'centre of gravity', explain how the player moves to manipulate his balance and stability to create a successful serve.

(6 marks)

(b) Outline **three** components of fitness a volleyball player should be focusing on while training; and suggest a method of training for each component. (6 marks)

(c) Outline the **two** different types of balance and suggest the type of balance a volleyball player would use more frequently. (3 marks)

End of Questions

Supplementary page

Question number: _____

Supplementary page

Question number: _____

Supplementary page

Question number: _____

Supplementary page

Question number: _____

Supplementary page

Question number: _____

Supplementary page

Question number: _____

ACKNOWLEDGEMENTS

Question 3
Golf bunker https://pixabay.com/photos/golf-bunker-sport-golf-course-sand-83868/

Question 17
Heart Diagram https://commons.wikimedia.org/wiki/File:2018_Conduction_System_of_Heart.jpg

Question 21
Hurdles https://pixabay.com/photos/track-colorado-springs-colorado-81050/

Question 22
Bend Back https://pixabay.com/photos/back-bend-bridge-exercise-female-18713/

Question 23
Jayden Short https://commons.wikimedia.org/wiki/File:Short_kicking_(cropped).jpg

Question 24
Lana Rogers http://www.sunshinecoastdaily.com.au/rogers-savours-nutri-grain-ironwoman-title-success/3903056

Question 24 (e)
Blood Flow Distribution https://www.cambridge.org/core/books/fundamentals-of-anaesthesia/physiology-of-the-circulation/EFE371B81571A3D05E8EC16C7AA1081B

Question 25
https://commons.wikimedia.org/wiki/File:Matey_kaziyski.jpg

Question 29
Soccer kids https://pixabay.com/photos/team-grass-cheer-field-game-sport-2444978/

Question 30
Jack Darling https://commons.wikimedia.org/wiki/File:Jack_Darling_2018.5.jpg

Question 31
High altitude training
https://commons.wikimedia.org/wiki/File:2017_New_York_Marathon_(26421280909).jpg

Question 32
Andrew Gaff https://commons.wikimedia.org/wiki/File:Andrew_Gaff_2018.5.jpg

Question 32
Jack Auskick https://torquaytigers.com/auskick/

Question 33
Tour de France https://pixabay.com/photos/wheel-road-bike-race-group-sprint-4676003/

Question 34
Volleyball https://commons.wikimedia.org/wiki/File:Serve_in_volleyball.jpg