



External Assessment 2022

SPORT SCIENCE

SPT315118

Section **A** Exercise Physiology

Pages	24
Questions	7

Preparation time for this exam: 15 minutes

Suggested working time: 60 minutes

Instructions:

- Answer **all** questions and **all** items within each question.
- Write your answers in the spaces provided in this exam paper.
- The exam is **three (3)** hours in length. It is suggested that you spend **approximately 60 minutes** in total answering the questions in this section.
- All answers must be written in **English**.
- You **must** make sure your answers address:
 - Criterion 1 describe and analyse physiological aspects of exercise
 - Criterion 2 analyse and explain physiological responses to training and recovery
 - Criterion 5 analyse and interpret sport science data and information.

Marker Use	
C1	/ 25
C2	/ 25
C5	/ 10

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Guide to Exam Structure

		Questions available	Questions to answer	Suggested working time	Marks available
Section	A	7	7	60 minutes	60
Section	B	4	4	45 minutes	45
Section	C	4	4	45 minutes	45
Section	D	3	2	30 minutes	30
Totals		18	17	180 minutes (3 hours)	180

Question 1

This question assesses **Criterion 1**.

Table 1 below shows the men's World Record times and corresponding average speeds in a number of running events.

Table 1

Event	World Record time	Average speed
100 m	9.58 s	10.44 m/s
800 m	1 min 40.91 s	7.93 m/s
1500 m	3 min 26.00 s	7.28 m/s
42 km marathon	2 h 1 min 39.00 s	5.78 m/s

- a) With reference to **Table 1**, identify and explain which system is the dominant supplier of energy for the male world record holder during the 100-metre event.

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Australian 800m runner Peter Bol – (Matthias Hangst/Getty Images) - <https://www.abc.net.au/news/2021-08-02/peter-bol-chasing-olympic-glory-for-australia/100341594>



Australian Marathon runner Brett Robinson - <https://www.athletics.com.au/news/melbourne-marathon-festival-preview/>

Question 1 continues

Question 1 continued

Marker use

b)

- i. Peter Bol is an Australian 800-metre runner and Brett Robinson is an Australian marathon runner. With reference to **Table 1**, explain the difference in energy system interplay for the two athletes in their events.

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- ii. For Robinson, discuss the likely fuels used for energy production during the marathon event.

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- iii. Provide **one (1)** reason why Bol and Robinson would both experience oxygen deficit.

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Section A continues

Section A continued

Question 2

This question assesses **Criterion 1**.

Australian cyclist, Luke Plapp won the 2022 National Road Race Championships over a distance of 185.6km.



Source: **CON CHRONIS**: <https://cyclingtips.com/2022/01/luke-plapp-solos-to-australian-road-title/>

- a)
- i. Luke would likely ride at a steady state for periods in this race. What is a steady state?
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- ii. What is **one (1)** reason or situation in the race when Luke may not be riding in steady state?
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Question 2 continues

Question 2 continued

Marker use

b)

- i. Define VO₂ MAX. Use your understanding of VO₂ MAX to discuss **two (2)** physiological inconsistencies with the following statement:

“Luke won the race, so he must have the highest VO₂ MAX in comparison to his competitors”.

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- ii. Identify how Luke could most accurately compare his VO₂ MAX with his competitors who are of different body sizes?

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c)

- i. What are **two (2)** acute muscular responses to exercise that Luke would experience when cycling?

One (1):

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Two (2):

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- ii. Explain why the **two (2)** responses in **c) i.** occur.

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Section A continues

Section A continued

Question 3

This question assesses **Criterion 1**.

In 2019, Eliud Kipchoge, with assistance, became the first person to run under two hours for a marathon (42.2 km), clocking 1 hour 59 minutes and 40 seconds. His average pace was 2 minutes 50 seconds per kilometre throughout the run. A well-trained 800 m track runner attempted to hold Kipchoge's average pace. They had to run at maximal intensity and, due to fatigue, they were unable to continue after 1 km.



Source: (Reuters: Lisi Niesner) - <https://www.abc.net.au/news/2019-10-12/eliud-kipchoge-runs-marathon-in-under-two-hours/11597186>

- a)
- i. What is the likely predominant muscle fibre type Kipchoge would have in his legs?

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- ii. List **three (3)** different characteristics of this muscle fibre type to support your answer to item a) i.

One (1):

Two (2):

Three (3):

Question 3 continues

Question 3 continued

- b) With reference to Lactate Inflection Point (LIP), define and explain how Kipchoge could maintain an average pace of 2 minutes 50 seconds per kilometre for 42.2 km, whereas the 800 m track runner could only run at this pace for 1 km.

Marker use

3

- c) Because Kipchoge is an elite endurance runner, physiologically he may be able to spare glycogen. What does this mean and how would it benefit him?

2

- d) i. State **two (2)** chronic circulorespiratory adaptations as a result of Kipchoge's training that would be observed at rest.

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One (1):

Two (2):

- ii. Describe why the chronic circulorespiratory adaptations stated in item **d) i.** occur.

2

Total C1

25

Question 4

This question assesses **Criterion 2**.

Earlier this year, the Australian women's cricket team beat England to win the World Cup. This demonstrated good form leading into the Birmingham Commonwealth Games in August 2022. During this tournament the team played five games of Twenty20 cricket in 10 days.



Source: <https://www.india.com/sports/womens-cricket-set-to-feature-in-2022-commonwealth-games-icc-and-ecb-welcome-move-3695193/>

Note: Twenty20 cricket = the two teams have a single innings to bat for 20 overs each.

- a) Explain **one (1)** physiological cause of fatigue that could have affected the cricket team's performance in the Commonwealth Games.

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- b)
- i. Due to playing a large volume of games across a condensed period of time in the Commonwealth Games, the cricket players may have experienced DOMS. Physiologically, why is DOMS thought to occur?

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Question 4 continues

Question 4 continued

Marker use

- ii. Identify **three (3)** recovery strategies the cricket players might have used post game to help combat fatigue or DOMS. Explain how each strategy may physiologically aid recovery.

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One (1):

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Two (2):

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Three (3):

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- c) Explain how the cricket team would have needed to taper and peak for their multiple cricket games.

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Section A continues

Question 5

This question assesses **Criterion 2**.

Samantha (Sam) Kerr is one of Australia's leading soccer players. As of 2022, Kerr is the all-time leading Australian international scorer, of any gender. A soccer game is approximately 90 minutes in duration (2 x 45 minute halves, plus any extra time). The figure below shows Sam striking the ball.



AAP: Brendon Thorne - <https://www.abc.net.au/news/2020-09-19/sam-kerr-second-highest-womens-rating-on-fifa-21-video-game/12681058>

- a) When striking the ball towards the goal, Sam needs to use a number of fitness components. Briefly explain why the following fitness components are necessary for striking a ball.

Muscular power:

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Balance:

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Question 5 continues

Question 5 continued

Marker use

- b) At various times throughout the training year, Sam incorporates the following **four (4)** training sessions.

Table 2

Session	Training activity	Intensity
A	45-minute steady-pace run	70–75% MHR*
B	3 × 10-minute runs (5-minute recovery between each repetition)	80–90% MHR*
C	20 × 5-second sprint (30-second recovery between each repetition)	95% MHR*
D	20 mins of activation and mobility exercises	40% MHR*

*MHR = Maximum Heart Rate

- i. Identify the training method Sam is using in:

Session A:

Session B:

Session C:

Session D:

- ii. List **one (1)** phase of the training year where Sam could incorporate the training method mentioned in session A and identify **one (1)** reason why this training would be of benefit to Sam during this phase.

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Question 5 continues

Question 5 continued

Marker use

- iii. Using **Table 2**, provide **one (1)** example of how Sam is applying the training principle of Specificity and **one (1)** example of how Sam might use the training principle of Progressive Overload.

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- c) Sam must be flexible to strike a ball. Name and explain how **two (2)** different flexibility training methods could contribute to Sam's performance. Provide **one (1)** example for each method.

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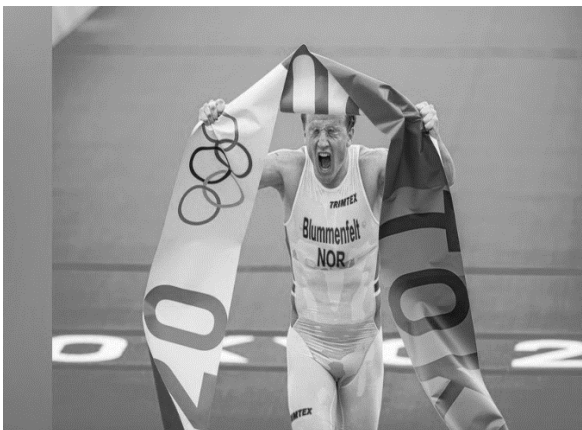
Exam continues over the page

Question 6

This question assesses **Criterion 2**.

In 2021, Kristian Blummenfelt made history by becoming the first male triathlete to win the Olympic and World titles in the same year. Both of these races involve a 1500m swim, 40km cycle and 10km run and were only four weeks apart. Notably, 8.5 months later he became ironman world champion. This race is considerably longer, involving a 3.8km swim, 180km cycle and 42.2km run. These performances would require appropriate periodisation.

Image 1



https://triathlon.org/news/article/kristian_blummenfelt_crowned_tokyo_2020_olympic_champion

Image 2



<https://www.thenationalnews.com/sport/olympics/>

- a)
- Discuss how Kristian's training year would be divided into phases.
 - List **one (1)** appropriate focus for Kristian for each phase of the training year.

3

- b)
- It is assumed that Kristian and his coaching team correctly periodised the training program, as overtraining syndrome was prevented. What is **one (1)** variable that could contribute to overtraining syndrome?

0.5

Question 6 continues

Question 6 continued

Marker use

- c) Before competing, Kristian would complete an extensive warm up. Provide **two (2)** physiological reasons why this is beneficial.

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- d) Kristian can be seen in **Image 2**, lying on the ground after finishing the Olympic Triathlon. Explain what is happening here in relation to alactacid debt.

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- e) Strength and conditioning is used to complement Kristian's swimming, cycling and running. Choose **two (2)** types of resistance training. Explain each method and how they would improve performance.

2

One (1):

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Two (2):

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- f) Kristian's ironman triathlon took him 7hrs 49mins to complete. Discuss **three (3)** post-exercise refuelling and/or hydration considerations for effective recovery.

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Total C2

25

Question 7

This question assesses **Criterion 5**.

Table 3 presents blood lactate concentration and heart rate data, obtained from two 21-year-old hockey players (Athlete A and Athlete B), during an incremental treadmill test to exhaustion at the end of their pre-competition phase of the training year. The speed was increased by 1 km/h every minute.

Table 3: Blood lactate concentration and heart rate data from two hockey players following an incremental treadmill test.

	Speed (Km/h)	Blood Lactate (mmol/L)	Heart Rate (bpm)
Athlete A	10	2	110
	11	2	122
	12	2	130
	13	2	141
	14	4	159
	15	4	163
	16	4.5	171
	17	5	180
	18	5.5	192
	19	6	199
	20	6.2	200
Athlete B	21	7	201
	10	2	152
	11	2	154
	12	4	169
	13	4.5	173
	14	5	179
	15	6.5	185
	16	7	187
	17	8.3	190
	18	10.9	192
	19	12.3	194

All responses to this question must make reference to Table 3 above.

- a)
- At a speed of 19km/hr, which athlete is producing more blood lactate? Provide data.
.....
 - Which athlete is accumulating more blood lactate at a heart rate of 192bpm? Provide data.
.....
- b) State the range of speeds where lactate clearance is equivalent to lactate production for:
- Athlete A:**.....
- Athlete B:**.....

Marker use

0.5

0.5

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Question 7 continues

Question 7 continued

Marker use

- c) At what **speed** and **heart rate** does the Lactate Inflection Point (LIP) occur for:

Athlete A:.....

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Athlete B:.....

.....

- d) At what heart rate range should each athlete train to improve their LIP?

Athlete A:.....

Athlete B:.....

- e) The ability of both athletes to sustain exercise effort when LIP is exceeded differs. Provide **two (2)** comparisons, using data.

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- f) Using data, explain which athlete would be able to work at a higher intensity for longer.

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Total C5

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End of Section A

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External Assessment 2022

SPORT SCIENCE

SPT315118

Section **B** Skill Acquisition

Pages	16
Questions	4

Suggested working time: 45 minutes

Instructions:

- Answer **all** questions and **all** items within each question.
- Write your answers in the spaces provided in this exam paper.
- The exam is **three (3)** hours in length. It is suggested that you spend **approximately 45 minutes** in total answering the questions in this section.
- All answers must be written in **English**.
- You **must** make sure your answers address:
 - Criterion 3 analyse and discuss concepts of skill acquisition in sport
 - Criterion 5 analyse and interpret sport science data and information.

Marker Use	
C3	/ 35
C5	/ 10

Blank Page

Guide to Exam Structure

		Questions available	Questions to answer	Suggested working time	Marks available
Section A		7	7	60 minutes	60
Section B		4	4	45 minutes	45
Section C		4	4	45 minutes	45
Section D		3	2	30 minutes	30
Totals		18	17	180 minutes (3 hours)	180

Question 8

This question assesses **Criterion 3**.

The recent Winter Olympic Games in Beijing showcased downhill skiers demonstrating great balance when moving very quickly. They have to change direction and avoid hitting the gates which guide them down the course. They do not have access to their coach or know the time they have taken until they complete the course.



Source: <https://www.dailysabah.com/sports/mikaela-shiffrin-wins-her-first-world-cup-ski-race-since-january/news>

- a) Downhill skiing is carried out in a closed environment. What are **two (2)** characteristics of this type of environment?

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- b) If a skier is thinking about controlling their speed, following the course and avoiding hitting gates, provide **two (2)** reasons why their skills need to be autonomous. Also, provide **two (2)** reasons why a beginning skier in the cognitive stage of learning would struggle to perform well in this event.

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Question 8 continues

Question 8 continued

Marker use

- c) Considering the centre of gravity, why is the skier bending their legs in the photograph on page 4? What is the benefit of doing this?

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- d) What type of feedback is a downhill skier dependent on whilst completing the course? What are **two (2)** possible sources of information for this type of feedback?

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- e) Identify **one (1)** reason why feedback works and briefly explain this benefit.

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Section B continues

Section B continued

Question 9

This question assesses **Criterion 3**.

In March, Australian sailor, Tom Slingsby, captained Australia's SailGP yacht to victory in a series sailed all around the world. They had to battle elite opponents, rapidly changing weather conditions and a whale crossing the course in San Francisco Bay, whilst sailing as quickly as they could around bouys (floating markers) in the correct order.



Source: <https://www.parley.tv/updates/2021/racing-for-the-future>

- a) Using examples from sail racing, describe why Slingsby would need good orienting and selective attention in order to race well.

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- b) If the whale did **not** cross the course, but could be seen by the competitors, what sort of information would it be?

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Question 9 continues

Question 9 continued

Marker use

- c) Define simple reaction time and choice reaction time. Provide **two (2)** reasons why experience assists Slingsby to react quickly to stimuli when racing.

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- d) What is anticipation? Why does Slingsby have to be careful not to over commit to anticipated events?

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- e) Schema is essential to sail racing. Define schema and provide **one (1)** example of its use in sailing.

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Question 10

This question assesses **Criterion 3**.

High jumper Eleanor Patterson continues to improve. This year Patterson has cleared two metres for the first time and is now ranked in the world's top five for this event.



Source: <https://www.smh.com.au/sport/athletics/patterson-claims-silver-behind-ukrainian-high-jumper-at-world-titles-20220319-p5a65z.html>

- a) Prior to commencing the run up, Patterson rocks back and forth, arms moving as if running. What are these movements called and why are they important?

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- b) What is a skill subroutine? Identify **two (2)** important considerations to ensure subroutines contribute to good skill performance.

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Question 10 continues

Question 10 continued

Marker use

- c) When reviewing jumps, Patterson's coach regularly uses video to assist them. How is this form of feedback classified and what are **two (2)** benefits of its use?

3

- d) Prior to each jump, Patterson relies on muscle memory to prepare. What is muscle memory and how do athletes develop it?

2

- e) High jump is a serial skill requiring great consistency in execution of each subroutine.
- Define serial skill.
 - Describe part practice and explain why it may have been useful to Patterson when first learning to jump.

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Question 10 continues

Question 10 continued

- f) Describe Newton's Third Law of Motion as it applies to Patterson when planting the take-off foot.

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Marker use

1

Total C3

35

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Exam continues over the page

Question 11

This question assesses **Criterion 5**.

As a way to improve junior golfer coaching, Golf Australia conducted research into the benefits of different types of feedback. Competent junior golfers had to hit balls as close to the hole/flag as possible and were scored on distance from the target and consistency. Scores were averaged for the group each day.

The golfers hit 100 balls with the same club each day, from the same distance, for five successive days under the following feedback conditions.

Day 1 – No feedback from a coach.

Day 2 – Verbal feedback from a coach after hitting 50 balls.

Day 3 – Verbal feedback from a coach after each 10 balls.

Day 4 – Video replay after each 10 balls.

Day 5 – Video replay with verbal feedback from a coach after each 10 balls.

Table 1: Average Golf Distance from Target and Consistency Data Under Different Feedback Conditions for Competent Junior Golfers

	Day 1	Day 2	Day 3	Day 4	Day 5
Accuracy	15.70m	15.30m	14.40m	15.50m	13.30m
Consistency	47/100	54/100	65/100	48/100	78/100

Note: Accuracy: distance (m) from the hole/flag.

Consistency: number of balls on the green out of 100.

Responses to this question must make reference to Table 1 above.

- a) Rank accuracy performance from best to worst for the five days. Include the data for each day.

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- b) Which feedback condition produced the best average consistency? Which feedback condition produced the worst average consistency? Include the relevant data for each.

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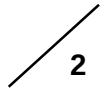
Question 11 continues

Question 11 continued

- c) With reference to Day 2 accuracy and consistency, briefly discuss the likely difference in the average accuracy and consistency between the first 50 balls and the second 50 balls. Include the relevant data.

Marker use

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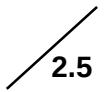
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- d) If a coach wanted to improve accuracy and consistency, using only verbal feedback, what change/s could they make to feedback conditions on Day 2? Justify the decision with reference to relevant data.

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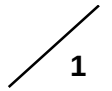
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- e) What is another factor, apart from feedback, that may have contributed to the golfers' improved performance on Day 5? Include the relevant data.

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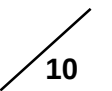
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Total C5

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End of Section B

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External Assessment 2022

SPORT SCIENCE

SPT315118

Section **C** Sport Psychology

Pages	16
Questions	4

Suggested working time: 45 minutes

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- Answer **all** questions and **all** items within each question.
- Write your answers in the spaces provided in this exam paper.
- The exam is **three (3)** hours in length. It is suggested that you spend **approximately 45 minutes** in total answering the questions in this section.
- All answers must be written in **English**.
- You **must** make sure your answers address:
 - Criterion 4 examine and discuss how sport psychology influences athletic performance
 - Criterion 5 analyse and interpret sport science data and information.

Marker Use	
C4	/ 35
C5	/ 10

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Guide to Exam Structure

		Questions available	Questions to answer	Suggested working time	Marks available
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Section	C	4	4	45 minutes	45
Section D		3	2	30 minutes	30
Totals		18	17	180 minutes (3 hours)	180

Question 12

This question assesses **Criterion 4**.

In February 2021, Tiger Woods broke both legs in a car crash. It was thought that Woods may never walk again, and would certainly not play golf. In April 2022 Woods was once again able to play and was competitive on returning to competition.



Source: <https://www.nytimes.com/2021/01/19/sports/golf/tiger-woods-back-surgery.html>

- a) What is self-efficacy? Identify **two (2)** antecedents of self-efficacy and explain how they could assist Woods on his return to competition.

3

Question 12 continues

Question 12 continued

Marker use

- b) To recover and return as he has, Woods would have relied, to a great degree, on appropriate goal setting. Provide **one (1)** example for each of the goal types below that would assist Woods.

2

Short term process goal to assist recovery:

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Long term outcome goal to provide focus on future golfing performance:

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- c) Woods' effort to return to playing indicates significant self-determination. Define self-determination and provide an example of how it may have met Woods' need for autonomy since the accident.

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- d) During rehabilitation, Woods was most likely intrinsically motivated. Provide **two (2)** reasons to support this statement.

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Section C continues

Question 13

This question assesses **Criterion 4**.

The Tasmanian National Basketball League [NBL] basketball team, the JackJumpers, has stunned many involved in basketball with its consistently good performances, including winning many matches at its opponents' venues. Coach Scott Roth is considered pivotal to this success.



Source: <https://www.jackjumpers.com.au/>

- a) Roth has often said the team is trying to improve week by week by focusing on the execution of its game plan. What is a game plan and how can it be shaped by the players?

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- b) Coach Roth would have identified a range of task relevant factors for players to use during a game. What are task relevant factors and when is it likely they would be used during a game?

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Question 13 continues

Question 13 continued

Marker use

- c) Identify **four (4)** pre-competition strategies players may engage in prior to arriving at the competition venue.

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- d) The JackJumpers' main tall player was injured mid-season and did not play again. The team implemented coping strategies, including adjusting its structure, and kept playing well.

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- i. Define coping strategies.

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- ii. Identify **two (2)** messages players need to believe in to give them confidence in a team's coping strategies.

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- e) Identify **three (3)** necessary components of effective de-briefing. For **one (1)** component you have chosen, discuss why it is important and how it is applied.

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Section C continues

Question 14

This question assesses **Criterion 4**.

At a National Rowing Championship, the smallest rowing club represented won a medal. As the week progressed, their performances improved until their medal-winning row on the final day. Their coaches kept reinforcing the need for positive thoughts and a focus on those things the crew could control.



Source: <https://juniorrowingnews.com/category/head-racing-2021-22/the-fours-head-2021/>

- a) Describe the basic theory presented in the Inverted-U Hypothesis. How could this theory be applied to explain the rowing crew's performance early in the week when they rowed poorly, and then to explain their medal-winning performance?

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Question 14 continues

Question 14 continued

Marker use

- b) Define state anxiety and provide **one (1)** reason why members of the crew may have been overanxious early in the week. Identify **two (2)** behavioural signs that may have been evident to the coaches to indicate some rowers were overanxious.

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- c) The coaches reminded the crew to maintain their regular use of visualisation each evening.
- i. Briefly discuss **two (2)** benefits to the rowers of using visualisation.

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- ii. Why is the rower's kinaesthetic sense so important during mental rehearsal?

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Question 14 continues

Question 14 continued

Marker use

d) The coaches asked the rowers to focus their attention on their technique and the speed of their strokes for the first 500m of the 2000m final.

i. Define attention.

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ii. In which attentional dimension would the rowers be in if they followed this advice?

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iii. Identify **one (1)** benefit and **one (1)** potential disadvantage for this crew of being in the attentional dimension identified in item **d) ii**.

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Total C4

35

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Question 15

This question assesses **Criterion 5**.

Formula One motor racing is conducted on 23 different racetracks around the world. Each has distinct characteristics and some drivers now rely on visualisation to support their preparation to drive at each track. Others use visualisation occasionally.

The data below indicates the performance of four drivers at five tracks over the past five years, using different methods of preparation.

Table 1: Finishing Position of Drivers at Five Tracks 2017 – 2021 and Use of Visualisation.

Driver	Track	Position 2017		Position 2018		Position 2019		Position 2020		Position 2021	
Sebastian Vettel	Baku	4 th	v1	3 rd	v3	7 th	v1	3 rd	v3	DNF 1	v1
	Singapore	1 st	v1	DNF 2	v3	3 rd	v1	7 th	v3	DNF 1	v3
	Monza	3 rd	v1	13 th	v3	8 th	v1	14 th	v3	10 th	v1
	Silverstone	2 nd	v3	7 th	v3	3 rd	v1	9 th	v3	9 th	v0
	Spa	9 th	v3	2 nd	v1	10 th	v3	13 th	v1	12 th	v0
Daniel Ricciardo	Baku	1 st	v2	5 th	v2	DNF 2	v2	7 th	v3	DNF 1	v0
	Singapore	4 th	v2	3 rd	v2	6 th	v2	12 th	v2	9 th	v0
	Monza	4 th	v2	4 th	v2	9 th	v3	11 th	v1	7 th	v1
	Silverstone	6 th	v2	3 rd	v2	4 th	v3	8 th	v1	10 th	v0
	Spa	3 rd	v2	6 th	v2	12 th	v3	10 th	v0	DNF 1	v2
Sergio Pérez	Baku	8 th	v0	12 th	v0	4 th	v1	2 nd	v3	DNF 2	v3
	Singapore	13 th	v0	DNF 1	v0	4 th	v1	5 th	v3	2 nd	v3
	Monza	DNF 1	v0	7 th	v0	5 th	v1	3 rd	v3	3 rd	v3
	Silverstone	16 th	v0	DNF 1	v0	DNF 2	v2	3 rd	v3	3 rd	v3
	Spa	DNF1	v0	DNF 1	v0	4 th	v3	2 nd	v3	4 th	v3
Lewis Hamilton	Baku	3 rd	v3	7 th	v1	1 st	v3	4 th	v3	DNF 1	v0
	Singapore	2 nd	v3	1 st	v3	5 th	v2	2 nd	v3	4 th	v3
	Monza	1 st	v3	1 st	v3	3 rd	v3	2 nd	v3	2 nd	v3
	Silverstone	1 st	v3	1 st	v3	2 nd	v3	1 st	v3	2 nd	v3
	Spa	4 th	v3	3 rd	v3	1 st	v3	DNF 2	v3	9 th	v1

Note: **v3** = Visualisation used each day for the three days immediately prior to race day.

v2 = Visualisation used each day for the two days immediately prior to race day.

v1 = Visualisation used on the day prior to race day.

v0 = Visualisation not used.

DNF 1 = Did not finish due to own error

DNF 2 = Did not finish due to error by another driver

Responses to this question must make reference to Table 1 above.

Question 15 continues

Question 15 continued

- a) Which track in which year had the most drivers making errors which ended their race? Include data in your answer.

Marker use

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- b) Lewis Hamilton is aware of the strong link between visualisation and performance. Provide **two (2)** pieces of data to support this statement.

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- c) Using data from **three (3)** years, identify and discuss the benefits of Sergio Pérez using visualisation before racing at Monza.

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Question 15 continues

Question 15 continued

Marker use

- d) Silverstone is a fast and technical track. Using the data for this track in 2021 comment on the visualisation preparation and performance at Silverstone for the **four (4)** drivers.

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- e)
- i. In which **two (2)** years did no driver fail to finish due to their own error. Provide relevant data.

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- ii. With reference to visualisation data, explain why these **two (2)** years were different to other years.

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Total C5

10

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End of Section C



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External Assessment 2022

SPORT SCIENCE

SPT315118

Section **D** Cross-Discipline Links

Pages	16
Questions	3

Suggested working time: 30 minutes

Instructions:

- Answer **two (2) questions only** in this section.
- Write your answers in the spaces provided in this exam paper.
- The exam is **three (3) hours** in length. It is suggested that you spend **approximately 30 minutes** in total answering the questions in this section.
- All answers must be written in **English**.
- You **must** make sure your answers address:
 - Criterion 6 examine and discuss cross-discipline links.

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C6	/ 30

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Guide to Exam Structure

	Questions available	Questions to answer	Suggested working time	Marks available
Section A	7	7	60 minutes	60
Section B	4	4	45 minutes	45
Section C	4	4	45 minutes	45
Section D	3	2	30 minutes	30
Totals	18	17	180 minutes (3 hours)	180

Question 16

This question assesses **Criterion 6**.

Ashleigh Barty recently retired from professional tennis whilst still the number one female player in the world, winning Wimbledon in 2021 and the Australian Open in 2022. In order to perform at such a high level, Barty said “I had to give everything I had mentally and physically. I have nothing more to give.”



Source: <https://www.wtatennis.com/news/2464976/the-ashleigh-barty-evolution-from-good-to-great-to-unstoppable>

Use **two (2)** cross-discipline links to demonstrate how Barty’s strong mindset (Sport Psychology) positively influenced her physical condition (Exercise Physiology) throughout her career.

15

Question 16 continues

Question 16 continued

Marker use

Question 16 continues

Question 16 continued

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Question 16 continues

Question 16 continued

Marker use

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Question 17

This question assesses **Criterion 6**.

Lance “Buddy” Franklin plays Australian Rules Football (AFL) for the Sydney Swans team. He has played AFL for 17 years and recently kicked his 1000th goal, becoming the 6th player in AFL history to do so.



Buddy Franklin kicks for his 1,000th goal...(Getty Images: Cameron Spencer)

Source: <https://www.abc.net.au/news/2022-03-25/landmark-day-as-swans-lance-franklin-kicks-1000th-afl-goal/100924004>

Use **two (2)** cross-discipline links between **Exercise Physiology** and **Skill Acquisition** that have assisted Franklin to develop and maintain his very high playing standard.

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Question 17 continues

Question 17 continued

Marker use

Question 17 continues

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Question 17 continues

Question 17 continued

Marker use

[illegible]

Question 18

This question assesses **Criterion 6**.

All sports provide a platform for athletes to develop a range of skills including self confidence, perseverance, discipline, teamwork and resilience. These skills are developed to improve their mindset/mental wellbeing and skill execution.

Select an athlete or team, specify their sport and use **two (2)** cross-discipline links between **Sport Psychology** and **Skill Acquisition** to demonstrate how they can improve their performance.

My sport is:

My athlete or team is:

Optional background information: (you may wish to consider a specific scenario: e.g. lead up to a major match/competition, during pre-season; returning to team after being dropped/injured etc.)

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Question 18 continues

Question 18 continued

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Question 18 continues

Question 18 continued

Marker use

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