SHORE

Exam Number: ☐☐☐

Year 12

Personal Development, Health and Physical Education

HSC Trial Examination

2018

General instructions

- Reading time – 5 minutes
- Working time – 3 hours
- Write using black or blue pen
- Write your exam number at the top of this page

Total marks – 100

Section 1 Pages 1 - 17

60 marks

This section has two parts, Part A and Part B

Part A – 20 marks

- Attempt Questions 1 - 20
- Allow about 40 minutes for this section

Part B – 40 marks

- Attempt Questions 21 – 27
- Allow about 1 hour and 10 minutes for this part

Section 2 Pages 20 - 21

40 marks

- Attempt TWO questions from Questions 28 - 32
- Allow about one hour and 10 minutes for this section
- Complete each option in separate booklets

Note: Any time you have remaining should be spent revising your answers.

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Section I

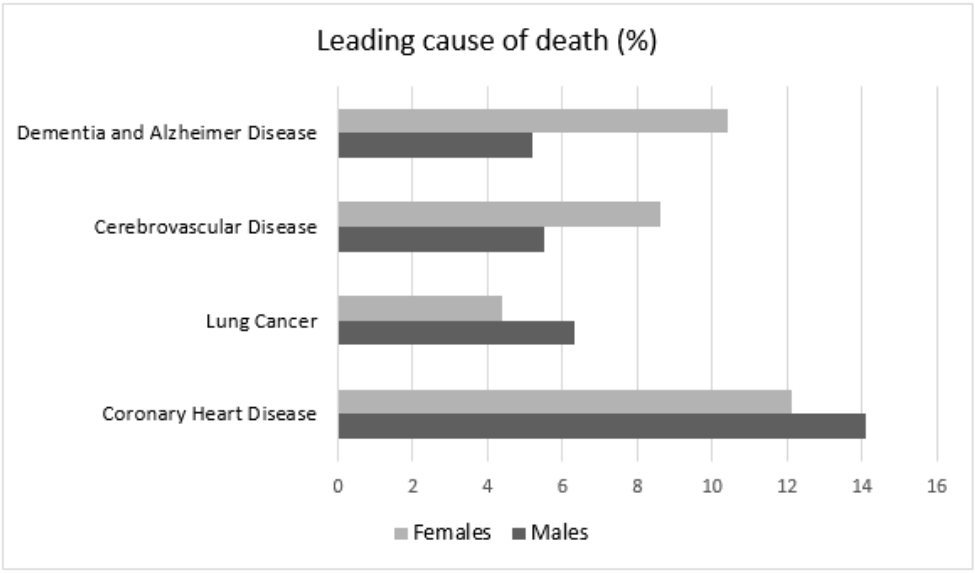
Part A – 20 marks
Attempt Questions 1 – 20
Allow about 40 minutes for this section

Use the multiple-choice answer sheet for Questions 1 – 20

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1. Refer to the graph below to answer question 1.
   What were the top two causes of mortality for females in 2017?

   a) Cerebrovascular disease and lung cancer
   b) Coronary heart disease, dementia and Alzheimer disease
   c) Cerebrovascular disease, dementia and Alzheimer disease
   d) Lung cancer and coronary heart disease



(Source: ABS, 2017)

2. A golfer imagines his swing and the trajectory of the ball before getting ready to play. This is an example of:

   a) Concentration
   b) Relaxation
   c) Goal setting
   d) Visualisation

3. Which of the following is the most common cause of cancer mortality in Australia?

   a) Lung
   b) Breast (among females)
   c) Prostate (among males)
   d) Bowel

4. Refer to the diagram below to answer question 4.
   The picture below illustrates a skill continuum. Which of the following skills, when performed during competition, is represented by 'W'?

   a) A rugby tackle
   b) A netball overarm pass
   c) A gymnastics vault
   d) A goal kick in soccer



5. Ischaemic heart disease is also known as:

   a) Stroke
   b) Peripheral vascular disease
   c) Coronary heart disease
   d) Cardiomyopathy

6. "Placing greater than normal demands on the body is required for a training adaptation to take place."
   Which of the following principles of training does this statement best describe?

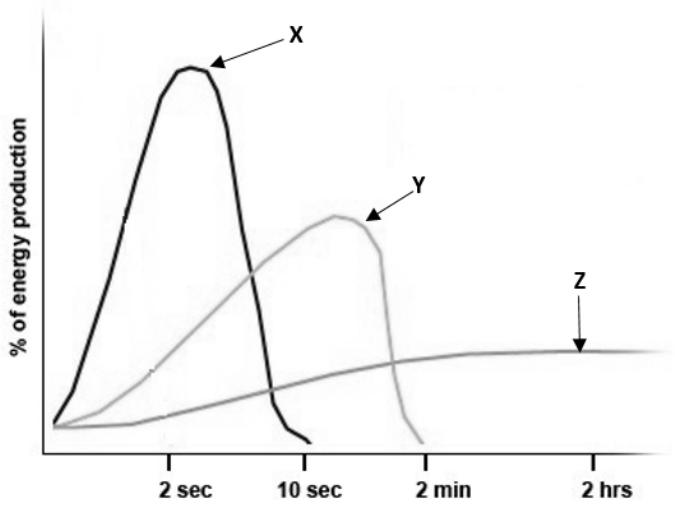
   a) Progressive overload
   b) Training thresholds
   c) Specificity
   d) Variety

7. Which of the following best describes complementary health care approaches?

   a) An individual's first point of contact with the health system
   b) Health care is provided by doctors, community nurses, dentists, pharmacists and other allied health professionals
   c) Health care delivered in a variety of settings, including at general practices, community health centres and at home
   d) A variety of practices and treatments usually outside of evidence-based, conventional medicine

8. Refer to the graph below to answer question 8.
   What is the main source of fuel for the energy system represented by 'X'?

   a) Creatine phosphate
   b) Glucose
   c) Protein
   d) Carbohydrate



9. What is a disadvantage of emerging new treatments and technologies on health care?

   a) Early detection
   b) Sustainability
   c) Advancements in surgical techniques, drugs and materials
   d) Cost and access

10. The aerobic threshold is the intensity needed in order to produce an adaptation that will improve aerobic capacity or VO_{2max}. The aerobic training threshold is normally between:

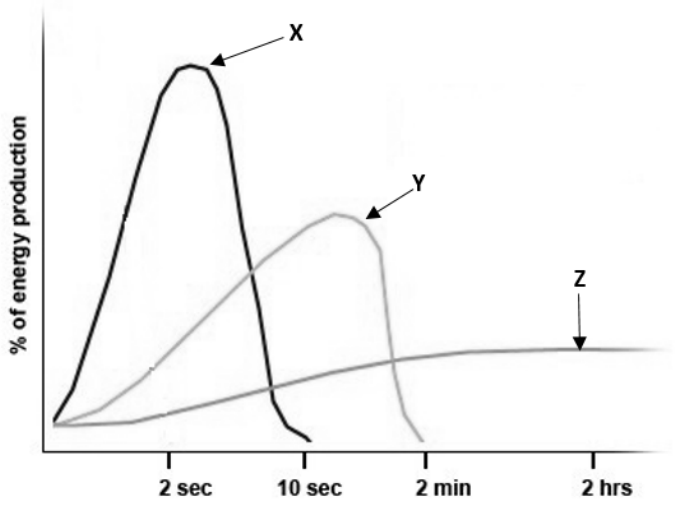
    a) 50% to 60% of maximum heart rate (MHR)
    b) 70% to 85% of maximum heart rate (MHR)
    c) 65% to 70% of maximum heart rate (MHR)
    d) 60% to 95% of maximum heart rate (MHR)

11. Which of the following are non-government organisations primarily responsible for?

    a) Public hospital services
    b) Medical services and private hospitals
    c) Legislation and laws
    d) Community and public health

12. Refer to the graph below to answer question 12.
    What are the by-products of energy production for the energy system represented by 'Z?

    a) Heat
    b) Pyruvic acid
    c) Carbon dioxide and water
    d) Lactic acid



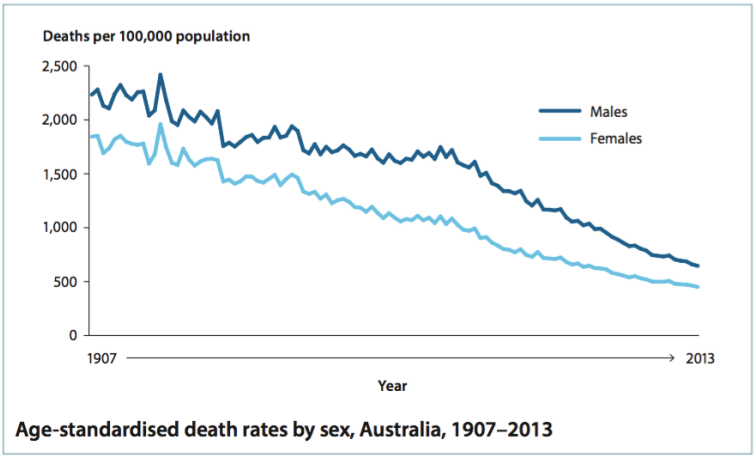
13. An aim of health promotion is to ensure fair distribution of available healthy resources across society. Which of the following social justice principles does this statement best represent?

a) Equity
b) Diversity
c) Supportive Environments
d) Equality

14. Which of the following is a physiological adaptation in response to training?

a) Increase in resting heart rate
b) Increase in cardiac output
c) Decrease in stroke volume
d) Decrease in haemoglobin levels

15. Using the graph from AIHW – *Australia's Health in Brief 2016*, what trend is true for gender standardised death rates in Australia?



Age-standardised death rates by sex, Australia, 1907–2013

(A) More females die per 100,000 population since 1907

(B) Death rates will eventually reach 0 per 100,000 population if the current trends continue

(C) Death rates have fallen over the years due to population increases

(D) Death rates in Australia have more than halved for both men and women over the past 100 years

16. Which of the following is a benefit of massage when used as a recovery strategy in sport?

a) Improved recovery by increasing blood flow and removal of accumulated metabolic waste products
b) Decreased inflammation and blood flow around the muscles
c) Increased cardiac output and stroke volume
d) Narrowing of the blood vessels to reduce the sensation of pain

17. Which of the following best defines Medicare?

a) A Federal government initiative that provides free or subsidises medicines to Australians
b) A health insurance scheme funded by the Federal government that gives Australian residents access to healthcare
c) Health insurance for ancillary and ambulance services
d) Universal access to public and private health services and facilities

18. Which of the following statements best describes carbohydrate loading?

a) A form of supplementation used by athletes to increase efficiency of the aerobic energy system
b) Increasing stores of muscle glycogen during an endurance event to improve performance and decrease fatigue
c) A process of increasing food intake in the 24-hours prior to a sporting event
d) A pre-performance strategy used to load muscle glycogen stores before a sporting event

19. 'Towards Zero' is a national road safety health promotion initiative. An aim of the initiative is to develop a Towards Zero community partnership with local government, institutions and business to improve local road safety.

Which of the following action areas of the Ottawa Charter is this example of?

a) Reorienting health services
b) Strengthening community action
c) Building healthy public policy
d) Developing personal skills

20. Australia's population is growing and ageing. What impact will this have on carers of the elderly?

a) Additional training opportunities will be provided for people to work in the aged-care sector
b) Informal carers will be provided with flexible working arrangement to meet the caring needs of family
c) There will be increased demand for both informal care and community-based care services due to the ageing population
d) The weekly income of carers will increase

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2018 TRIAL HSC EXAMINATION
Personal Development, Health and Physical Education

Section I – Part B
40 marks
Attempt Questions 21 - 28
Allow about 1 hour and 10 minutes for this part
Answer the questions in the spaces provided. Extra writing space is provided on page 18.
If you use this space, clearly indicate which question you are answering.

Question 21
What role does epidemiology play in measuring the health status of a population. (3 marks)

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Question 22

Describe the disadvantages of private health insurance. (4 marks)

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Question 23

Explain the environmental determinants of health for ONE group experiencing health inequities.

(5 marks)

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Question 24

To what extent is health care accessible to all sections of the community? (8 marks)

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Question 25

Refer to the picture below to answer question 25.



Describe the training methods most appropriate to this sport. (3 marks)

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Question 26

How can heredity influence the performance of skills? (4 marks)

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Question 27

Compare the effect of anxiety and arousal on performance. (5 marks)

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Question 28

Discuss the use of protein and creatine supplementation for improved performance. (8 marks)

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Section I - Part B extra writing space
If you use this space, clearly indicate which question you are answering.

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SHORE

2018 TRIAL HSC EXAMINATION
Personal Development, Health and Physical Education

Section II
40 marks
Attempt TWO questions from Questions 29 – 33.
Allow about 1 hour and 10 minutes for this section

Answer both questions in the writing booklet. Extra writing booklets are available.

In your answer you will be assessed on how well you:
- demonstrate knowledge and understanding of health and physical activity concepts relevant to the question
- apply the skills of critical thinking and analysis
- communicate ideas and information using relevant examples
- present a logical and cohesive response

Question 29 – Health of Young People (20 marks)

(a) To what extent can developing health literacy skills assist young people to enjoy good health?

(8 marks)

(b) Evaluate the strategies implemented by non-government agencies that target one major health issue impacting on young people.

(12 marks)

Question 30 – Sport and Physical Activity in Australian Society (20 marks)

(a) Discuss the relationship between government funding and Australia's sporting identity.

(8 marks)

(b) Examine challenges to traditional male domain in sports and the entry of women into these sports.

(12 marks)

Question 31 – Sports Medicine (20 marks)

(a) Discuss how matching of opponents and modified rules for children promote safe participation in sport.

(8 marks)

(b) Analyse the sports medicine considerations and implications for the ways young people engage in sport.

(12 marks)

Question 32 – Improving Performance (20 marks)

(a) Evaluate TWO training types used to improve performance by an athlete in a sport of your choice.

(8 marks)

(b) Justify why coaches need to use periodisation to achieve optimal sporting performance from their athletes.

(12 marks)

Question 33 – Equity and Health (20 marks)

(a) How do socioeconomic factors and access to services and transport contribute to the inequities experienced by different population groups in Australia?

(8 marks)

(b) Examine the media's role in influencing social attitudes and public policy for ONE population group experiencing health inequity.

(12 marks)

END OF EXAMINATION

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SHORE

Year 12

Personal Development, Health and Physical Education

HSC Trial Examination 2018

Marking Guidelines

SECTION 1 – PART A

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B	D	A	C	C	A	D	A	D	C	B	C	A	B	D	A	B	D	B	C

SECTION 1 – PART B

Question 21

What role does Epidemiology play in measuring the health status of a population?

Criteria	Marks
• Provides characteristics and features of the role of epidemiology	3
• Sketches in general terms some of the roles of epidemiology	2
• Provides relevant information associated with epidemiology	1

Sample answer

The role of epidemiology is collecting and analysing data on the rates and patterns of illness, diseases and injuries within populations. Epidemiological information is collected through sources such as health care services, surveys and hospitals and is then collected and collated to determine health priorities and where resources and funding are allocated.

Marker's Comments

The vast majority of students were in the top band here. They understood the concept of epidemiology and could link to roles it plays succinctly.

Question 22
Describe the disadvantages of private health insurance.
(4 marks)

Criteria	Marks
• Makes clear the characteristics and features of private health insurance • Provides relevant examples	4
• Sketches in general terms some characteristics of private health insurance • May use an example(s)	2 – 3
• Provide a relevant point about private health insurance	1

Answers could include:
There are many disadvantages of private health insurance. These include:

<u>Increasing expense:</u>
Private health insurance premiums had increased by approximately 70% over the last 10 years (3 x the inflation rate). There are often annual increases in fees, resulting in many private health policies being inaccessible for many Australians.

<u>Overlap between private and public health insurance</u>
There is a complex overlap of Medicare and private health cover in Australia. Individuals may have private health insurance are paying for policy, but may never use it if they are in good health, in addition to payment of the compulsory Medicare Levy tax.

<u>Affordability for groups experiencing health inequities:</u>
Many private health insurance policies are not affordable for the most disadvantaged groups in the community. For example, Aboriginal and Torres Strait Islander People have the lowest level of private fund membership. People with disabilities may find that annual limits, caps on claims and rebates may be exhausted before they have received the treatment they require.

<u>Additional out of pocket fees:</u>
Individuals may be required to pay additional out of pocket fees, for medical services they required. This if often referred to as 'the gap', the difference between the amount charged by a medical specialist/private hospital and the maximum amount paid by the private health insurance policy. Lower-income individuals on low cost plans may experience 'bill shock' as a result of the fee gap.

Marker's Comments
This question was answered well overall with most students in the top two bands. Many students wasted time and writing space including writing information on advantages which was not required.

Question 23
Explain the environmental determinants of health for ONE group experiencing health inequities.

(5 marks)

Criteria	Marks
• Makes clear the relationship between environmental determinants and the health inequities experienced by one group	5
• Provides the characteristics and features of environmental determinants and health inequities experienced by one group • Provide relevant examples	4
• Sketches in general terms the environmental determinants of health for one group experiencing health inequities • May use an example(s)	2 – 3
• Provide a relevant point about environmental determinants and/or a group experiencing health inequities	1

Answers could include:
Answers will vary depending on the group selected. The groups experiencing health inequities are:

- Aboriginal and Torres Strait Islander People
- Socioeconomically disadvantaged people
- People in rural and remote areas
- Overseas-born people
- The elderly
- People with disabilities

The social determinants are the circumstances in which people grow, live, work and age. They can affect health positively or negatively.

<u>Geographical location</u>
The geographic distribution of the Aboriginal and Torres Strait Islander population can pose substantial challenges to the delivery of health services. Geographic remoteness can be a barrier to health care services for many Aboriginal and Torres Strait Islander peoples, as accessing particular health services may involve multiple forms of transport and overnight stays. These can add to health care costs and reduce the patient's contact with family and friends. For example, 48% of all remote Indigenous communities are located 250 kilometres or more from the nearest public hospital.
<u>Access to health services and technology</u>
Indigenous Australians are more likely than non-Indigenous Australians to report difficulty in accessing affordable health services that are close by. Electricity interruptions were also frequent in the larger remote Indigenous communities

Water quality

Poor water quality in remote Indigenous communities is linked to hygiene-related health challenges. The recent '2016 Overcoming Indigenous Disadvantage' report identified that health outcomes for these communities were inequitable and compromised by environmental health factors including poor water quality and limited access to safely managed water. The effects on health of poor water quality can include skin and eye irritation, and conditions such as gastroenteritis. Fluoride levels in these communities is at levels below those set out in the current guidelines to prevent and manage tooth decay, of particular concern to Indigenous communities with limited access to dental services due to geographic location and socioeconomic status.

Housing:

Aboriginal and Torres Strait Islanders have, on average, poorer quality housing than non-Aboriginal Australians Poor-quality housing influences physical and mental health. Aboriginal and Torres Strait Islanders are at greatest risk of living in poor-quality housing. Overcrowding is much higher for Indigenous households at 10% (compared to 3.8%).

Marker's Comments

Overall not answered well. Needed better specific use of syllabus terminology ie environmental determinants are access to health services, access to technology and geographic location (not climate. Many responses did not do this. Some confusion around determinants ie education is a SE determinant not environment.

Question 24

To what extent is health care accessible to all sections of the community? (8 marks)

Criteria	Marks
• Makes clear judgements on the accessibility of health care to all sections of the community • Makes evident the relationship between access to health care and health status for sections of the community • Provide relevant examples	8
• Attempts to make a judgement about the accessibility of health care to communities • Provides relevant examples	6 – 7
• Makes clear the characteristics and features of health care accessibility in communities • Provides examples	4 – 5
• Sketches in general terms some features of health care accessibility in communities • May use an example(s)	2 – 3
• Provide a relevant point about access to health care	1

Answers could include:

National data suggest that most Australian children enjoy good physical health, but there are unacceptable pockets of inequity; health care in Australia is not accessible to all sections of the community.

There are a range of barriers that inhibit equitable access to health care and that cause or compound health inequities. These include costs of care and fees for consumers; low health literacy, poor access to health service information by consumers; and unavailability of timely, quality services in parts of the country. For example, Lower levels of access to primary care partly explains why Aboriginal and Torres Strait Islander Australians are twice as likely as other Australians to present at hospital outpatient/casualty services.

People in rural and remote areas have lower access to health care compared with their metropolitan counterparts because of distance, time factors, costs and transport availability. Health services are mainly located in densely populated areas and regional areas.

Inequities in access to health care, between our most and least advantaged citizens persist. People on low incomes often experience inequity in access to health care. For example, the limited availability of public oral health services and the costs of private services means that people on low incomes tend to receive episodic pain relief rather than the routine care that can reduce and prevent dental disease.

There are many government initiatives that attempt to increase equity in health care. For example, Medicare aims to give all Australians access to adequate, affordable health care, irrespective of their personal circumstances. Features of Medicare include free treatment for public patients in public hospitals and subsidisation of the costs of a wide range of

prescription medicines under the PBS. However, universal *access* to services due to the limited availability of doctors in remote and rural communities.

If access to health care was equitable for all sections of the community, it would be based on need, Rather, social determinants such as geographical location and socioeconomic status too often determines what health care individuals receive and how quickly they can receive it.

Marker's Comments

Key directive term needs to have judgements to access top band. A mixed range of responses. Many students did not address the key term "to what extent" thus not making judgements and making relationships between access to health care / health status clear to access the top band. Some students attempted to answer the response using three SJ principles however the question specifically asked for "accessibility". Many students were at least able to identify Medicare / PBS / Royal Flying Doctor Service as means used by the government to decrease equity and thus increase accessibility.

Question 25
Refer to the picture below to answer question 25.



Describe the training methods most appropriate to this sport.
(3 marks)

Criteria	Marks
• Provides the characteristics and features of the training method most appropriate to weight lifting • Uses an example	3
• Provides some relevant information about training methods for weightlifting • May use an example	2
• Provides a relevant point about training methods	1

Answers could include:
Strength training is the most suited training type for weightlifting. It involves the use of resistance to muscular contraction to build the strength and size of skeletal muscles. The following strength training methods are appropriate:

<u>Free/fixed weights</u>
Fixed weights are traditional plate loaded exercises. They allow the athlete to isolate specific muscle groups without using other muscles for stabilisation, unlike free weights. Free weights are beneficial in strength training to practice total body control.

<u>Elastic</u>
Elastic strength training provides variation in the load being lifted throughout the range of movement. It is beneficial for a weightlifter to improve their ability to overcome the 'sticking point' of a lift. This method also helps to increase the force production in the latter stages of the exercise.

<u>Hydraulic</u>
Hydraulic machines may be used by a weightlifter lifting heavy weights, as there is no need for a spotter. Although, it is not the preferred method as theoretically, this method only provides as much resistance as the athlete's body can produce.

Marker's Comments

A mixed range. Students either got this question very right or very wrong (used incorrect syllabus content confusing practice methods or principles of training with training methods. Many students also described flexibility training in conjunction with strength (appropriate).

Question 26
How can heredity influence the performance of skills?
(4 marks)

Criteria	Marks
• Inquires into the influence of heredity on performance of skills • Demonstrates a clear understanding of heredity and its relationship to performance of skills • Provides relevant examples	4
• Sketches in general terms the how heredity can influence the performance • May provide an example(s)	2 - 3
• Provides some relevant information about heredity and performance	1

Answers could include:
An athlete's heredity has the potential to positively influence the performance of skills when combined with appropriate training.

For example, 80% of the variation in height and body type is due to genetic factors. Height is beneficial for performance of skills in many team sports, such as spiking and blocking in volleyball, rebounding in basketball and goal shooting in netball. Body type has long been associated with increased ability in certain sports skills, such as mesomorphs in power sports and ectomorphs in endurance athlete skills.

Heredity has a large influence on muscle fibre composition (fast or slow twitch). For example, having the ACTN3 gene will positively influence the performance of sprinting skills, if the athlete is born with predominantly fast-twitch genes.

Marker's Comments
Students either knew syllabus content of didn't. Those that didn't were vague, used irrelevant material ie physical disability, disease, skill related fitness components, personality traits. Quite a long of generalised comments.

Question 27
Compare the effect of anxiety and arousal on performance.
(5 marks)

Criteria	Marks
• Makes clear how anxiety and arousal are similar and different • Demonstrates a clear understanding of arousal and anxiety • Provide relevant examples	4 – 5
• Sketches in general terms the similarities and/or differences between anxiety and arousal • May use an example(s)	2 – 3
• Provide a relevant point about anxiety and/or arousal	1

Answers could include:
Anxiety is a psychological state, that often leads to uncertainty in terms of performance and skill execution. Athletes experiencing anxiety may show symptoms such as tension, increased heart rate, rapid breathing, apprehension, confusion and loss of confidence. Often referred to as a 'mental meltdown' or 'choking', it can have a detrimental effect on performance, resulting in incorrect performance of skills and motor patterns. For example, golfer Rory McIllroy lost a US Masters tournament after going into the final round with a six-shot lead. He later reflected that he played tentatively and lost trust in his skills.

Arousal also affects performance, although the signs and symptoms are different to anxiety. Arousal is a physiological process, a person's heightened state of emotion. It is different to anxiety, as an optimum level of arousal is necessary in any sporting performance, with different sports requiring different levels of performance. For example, in rugby and boxing, higher arousal levels will lead to increased strength, power and aggressiveness, having a positive effect on performance. Too much or too little arousal will cause poor performance.

Marker's Comments
Many students showed a poor understanding of concepts of anxiety and arousal struggling with anxiety. Most answers were generalised. Many students also lacked sports specific examples to illustrate the impact on performance.

Question 28
Discuss the use of protein and creatine supplementation for improved performance.
(8 marks)

Criteria	Marks
• Identifies the issues and provides points for and against the use of protein and creatine supplementation for improved performance • Demonstrates a clear understanding of protein and creatine supplementation • Provide relevant examples	8
• Identifies some issues for and/or against protein and creatine supplementation for improved performance • Provides relevant examples	6 – 7
• Provides the characteristics and features of protein and creatine supplementation • Provides examples	4 – 5
• Sketches in general terms some information about supplementation • May use an example(s)	2 – 3
• Provide a relevant point about supplementation	1

Answers could include:
Supplementation is widely used by athletes to improve training effects and performance.

<u>Protein supplementation</u>
Protein is the perfect source of the amino acid building blocks needed for new muscle growth and repair. The American College of Sports medicine recommends 1.2 - 1.7 grams of protein per kilogram of body weight. The recent Australian Health Survey reported on average, males eat 1.2 grams and the females 1.1 grams of protein per kilogram body weight. Although sportspeople do have higher energy needs, the data suggests athletes can acquire protein requirements from food alone. For example, the standard nutritional plan for strength-based athletes should provide approximately two grams of protein per kilogram body weight, per day. Thus, protein supplementation is not essential if adequate protein intake can be achieved from dietary sources.

However, there are occasions where supplementation may be appropriate for athletes, such as when travelling or during an intense training schedule. Protein supplementation can also enhance muscle mass and performance when the training stimulus is adequate (frequency, volume, duration). It can also be useful in stimulating muscle protein synthesis following straining training. Current literature suggests most benefits are derived from whey protein supplementation.

<u>Creatine supplementation</u>
Current research is mixed in regard to the benefits of creatine supplementation. Creatine is a fuel source for ATP, an energy system used during short bursts of anaerobic power and strength. The body converts creatine to phosphocreatine, where it is stored in muscles and for energy. Subsequently, athletes may use creatine supplements to improve athletic performance

and increase muscle mass. Creatine monohydrate has been linked to increased efficacy for high-intensity, explosive exercises, for example sprinting and weight lifting.

However, creatine supplements can also have a negative effect on performance, as high long-term dosage may lead to liver, kidney and/or heart damage. Creatine supplementation can increase weight gain due to water retention and has been linked to other detrimental side-effects including muscle cramping, nausea, dizziness and gastrointestinal pain.

Marker's Comments

Students needed to look at both the positive and negative of use – many didn't. Students need to avoid slabs of information without dividing into paragraphs in 8 mark questions. Paragraphs provide structure and assist with creating a clear / logical response. When answering a 'discuss' question, students needs to look at advantages and disadvantages of issue. Most students were able to describe how supplements enhance performance but struggled with specific negative effects. Students failed to mention that protein can be adequately sourced via diet. Those that knew syllabus content and how to "discuss" did well.

Question 31 – Sports Medicine

a) Discuss how matching of opponents and modified rules for children promote safe participation in sport.

(8 marks)

Criteria	Marks
• Makes clear points for and/or against the matching of opponents and modified rules for children in promoting safe participation in sport • Provides characteristics and features of both matching of opponents and modified rules for children in sport • Provides relevant examples	8
• Provides the characteristics and features of matching of opponents and modified rules for children in sport • Attempts to link matching of opponents and/or modified rules for children to safe participation • Provides examples	6 – 7
• Provides the characteristics and features of matching of opponents, modified rules for children and sport participation • Provides an example(s)	4 – 5
• Sketches in general terms some relevant information about safe sport participation	2 – 3
• Provides a relevant point about sports medicine for children	1

Answers could include:

The introduction of rules around matching of opponents and modifications to game play are effective in promoting safe participation in children's sport.

<u>Matching of opponents</u>

Matching of opponents has been introduced to many junior sports, in a bid to reduce the likelihood of injury. For example, the National Rugby League (NRL) announced in 2018 that will trial weight-for-age restrictions in junior competitions, following an increase in injuries to junior players. This is a positive move to encourage safe participation, as juniors will be grouped by size, maturity and age. As such, it is hoped the new divisions will provide maximum participation and a fair playing field in a safe environment as there will be fewer discrepancies in size, height or weight within a team and competition.

<u>Modified rules for children</u>

Many team sports have introduced modified rules for children to increase safe participation when playing. For example, Minkey hockey's modified rules to reduce the likelihood of injury include that the ball can only be pushed in a stroke, the ball and stick cannot be raised, is a push, players must adhere to a 3 metre distances from the opposition.

The National Rugby Union introduced modified rules in their modified Walla Rugby competitions for children in the under 6 and 7 divisions. Children participate in non-contact "tag" based games that focuses on ball handling and running skills, rather than tackling, to promote safe participation in the sport.

All junior competitions in the NRL adhere to the National Safeplay Code, which prioritises safety and good conduct within the game. For example, in under-6 to under 12 games include, children do not participate in scrums for safety reasons. Likewise, the AFL Auskick program for children introduces tacking skills sequentially towards the end of the age-based program, in for players to develop their evasive skills and reduce the chance of injury.

Marker's Comments (TMW)

Generally this question was answered very well. Students were able to discuss how matching of opponents and modifying rules for children promoted safe participation in sport. Better responses made very clear that matching of opponents through size, maturity, age and skill level and modifying rules for children, promoted safe participation in sports. These students also used specific and relevant examples to support their statements.

Question 31 – Sports Medicine

b) Analyse the sports medicine considerations and implications for the ways young people engage in sport.

(12 marks)

Criteria	Marks
• Draws out and relates the implications between sports medicine considerations and the implications for the ways young people engage in sport • Provides detailed information about the medical considerations for children and young athletes • Provides relevant examples	11 - 12
• Provides clear understanding of sports medicine and the implications for young people in sport • Recognises the characteristics and features of medical considerations for children and young athletes • Provides relevant examples	8 – 10
• Provides characteristics and features of medical considerations for young people in sport • Provides examples	5 – 7
• Sketches in general terms some medical considerations for young people in sport • Provides an example(s)	3 – 4
• Provides one relevant point about sports medicine and young people	1 – 2

Answers could include:

Children may experience a variety of conditions, which have implications for the ways they engage in sport.

<u>Medical conditions (asthma, diabetes, epilepsy)</u>

Children with asthma can still engage in sport. The coach/manager should be aware if they are taking a preventer medication and ensure an adequate warm-up. If asthma is induced by exercise, children may take a reliever medication, as set out in their asthma plan. Children with diabetes can engage in sport, they should ensure they have their blood glucose tested before and after exercise and may require medication to avoid hyper or hypoglycemia.

There are implications in the ways children who experience epilepsy engage in exercise, the coach/manager should avoid activities that pose a seizure risk such as overexertion, dehydration, and low blood sugar. Children should wear appropriate protective equipment in contact sports.

<u>Overuse injuries</u>

To avoid the possibility of an overuse injury (eg stress fractures, tendonitis), young people should engage in a variety of sports activities and have adequate rest between games and competitions to avoid over-training. Recent research has found that junior athletes should

engage in sport, but avoid specialisation (year-round training in only one sport) and intensive training before the age of 12 to avoid overuse injuries.

Thermoregulation

Young people should engage in sport outside of the hottest part of the day (eg 11am – 3pm during summer). Game play of shorter duration with hydration and interchange opportunities are encouraged to avoid over-exertion in hot climates. Young people should wear clothing that is suitable to the sport they are engaging in, for example, fabrics that minimise heat storage and enhance evaporation during the summer months.

Appropriateness of resistance training

Resistance training in young people is a topic of debate. Peak organisation Sports Medicine Australia, advises that young people can engage in resistance training for sports performance if the program is properly designed and supervised. The benefits of a safe resistance training program include improved strength, injury prevention and enhanced motor skills. Safe engagement in resistance training for young people includes correct technique, utilising large muscle groups while lifting light loads in high repetitions.

Marker's Comments (ASL)

Well answered by most. Boys knew there syllabus points well. Band 2/3 responses missed syllabus points or lacked detail. Many of these were incomplete. Band 4 response required greater detail in explanation of some or all and also needed better examples of how SM manages the condition to promote participation or limit risks. Some response missed 1 or 2 syllabus points. Band 5 answers gave a detail explanation of each medical condition, thermoregulation, overuse injuries and appropriateness of resistance training. They also had some relevant examples and ways to manage. Band 6 response also gave detailed explanations of each but included detailed ways SM could manage each condition both ways to limit risks and deal with any occurrences. They also identified that these conditions would not stop an athlete participating if managed correctly.

Question 32 – Improving Performance

Question 32 (a)

Evaluate TWO training types used to improve performance by an athlete in a sport of your choice. (8 marks)

Criteria	Marks
▪ Identifies TWO relevant training types for a sport of your choice ▪ Clearly determines the value of how these training types can improve performance ▪ Includes all syllabus points (three) under each training type, using relevant examples for each ▪ Presents a logical and cohesive response ▪ Applies the skills of critical thinking	**8**
▪ Identifies TWO relevant training types for a sport of your choice ▪ Attempts to determine the value of how these training types can improve performance ▪ Includes most syllabus points using relevant examples for each ▪ Presents a logical and cohesive response	**6-7**
▪ Describes how an athlete can train to improve performance ▪ Communicates ideas and information using limited examples	**4-5**
▪ Provides some information about training to improve performance	**1-3**

Students learn about:	**Students learn to:**
● strength training – resistance training, eg. elastic, hydraulic – weight training, eg. plates, dumbbells – isometric training ● aerobic training - continuous/uniform - fartlek - long interval ● anaerobic training (power and speed) - developing power through resistance/weight training - plyometrics - short interval ● flexibility training - static - dynamic	● analyse TWO of the training types by drawing on current and reliable sources of information to: - examine the types of training methods and how they best suit specific performance requirements - design a training program - describe how training adaptations can be measured and monitored - identify safe and potentially harmful training procedures

- ballistic • skill training - drills practice - modified and small-sided games - games for specific outcomes, eg. decision-making, tactical awareness	

Answers may include and not limited to

Two of the following to be analysed and related to a sport of your choice:

Strength training – resistance training, weight training, isometric training

Aerobic training – continuous/uniform, fartlek, long interval

Anaerobic training (power and speed) – developing power through resistance/weight training, plyometrics, short interval

Flexibility – static, dynamic, ballistic

Skills training – drills practice, modified and small sided games, games for specific outcomes

Marker's Comments (HRB)

Students answered question well overall citing relevant syllabus and using appropriate examples using (1) one sport. Best responses evaluated consistently throughout and determined the value of each training type in terms of improvement. Best responses also included all (3) syllabus points under each training type. Important to consider the use of 'ballistic' stretching in sport if choosing 'Flexibility'. This in most cases would actually not be appropriate and could be detrimental in terms of performance for an athlete. Many responses did not include paragraphs, which needs to be addressed/improved in the HSC.

Question 32 (b)
Justify why coaches need to use periodisation to achieve optimal sporting performances from their athletes.

Criteria	Marks
• Supports the argument for the use of periodisation to achieve optimal sporting performance • Makes evident the relationship between the yearly plan, phases of a training year and optimal performance • Provides relevant examples	11-12
• Provides reasons why coaches change training plans to achieve optimal performances at specific times throughout the year • Provides relevant examples	8-10
• Provides characteristics and features of how and why coaches use periodisation • Provides relevant examples	5-7
• Sketches in general terms some information on periodisation and optimal performance	3-4
• Recognises and names some aspects of periodisation AND/OR provides examples of aspects of the yearly plan	1-2

Sample answer
The manipulation of the training schedule over a long period is referred to as periodisation and is essential to prepare athletes and teams for competition. It basically has the benefits of allowing the monitoring and adjustment of training volume, intensity and selection of specific activities or drills which coaches manipulate depending on individual needs, competition needs or even environmental needs. In addition, planned training will allow improvement to take place and will allow coaches and athletes to monitor levels of overtraining. Using football to demonstrate this periodisation cycle at its best is to break the yearly plan down to phases of competition: such as, pre-season, in-season and off-season. Each of these phases will have distinct aims and performance requirements.

The pre-season aims for football players to prepare for competitive rounds. This may be a period of 8-10 weeks which will allow for physiological adaptations in the areas of cardio respiratory endurance, flexibility, agility, leg strength and speed. In addition, skills will also be developed in preparation for the early competitive rounds. Ideally, both skill and components of fitness will be developed together as it is in the competitive games that this is required. Football sessions in this period will overload players in terms of time and intensity, as this allows the targeting of the aerobic energy system. In this period coaches will often employ aerobic training types such as Fartlek as it mimics football energy system use with periods of high and lower intensities over a long period of time. Coaches will also incorporate skill and competitive games to enable players to work under fatigue to again replicate competitive in season performance requirements.

At the completion of the pre- season phase players will have improved fitness specific to football, improved technique and skill developments as well as increased familiarisation with team tactics and team plyers strengths.

Competitive games for football occur in the in-season or in competition phase. Here coaches are driven by performance improvement. In season training is characterised by increased intensity of work with decreased volume as volume should not be an issue if pre-season goals were achieved. With this, football coaches aim to decrease repetition in skill activities and concentrate more on tactical aspects of football such as aspects of utilising different players to score.

These goals are often reached by dividing the in-season into manageable blocks of time, particularly if there is a finals set up to end the season. The aim of the manipulation of sessions and cycle is to achieve team optimum performance when required, each weekend, and more importantly for the finals series. Coaches therefore need to arrange weekly, monthly and yearly plans to achieve these goals. This is known as peaking and is often achieved in team based sports by a reduction in intensity close to performance times. This is difficult in team sports but is often achieved through the coach targeting more intense work earlier in the weekly plan and low intensity work closer to performance time. Footballers may have lighter sessions which involve set plays or light running during these times.

Coaches will need to monitor their sessions to avoid any signs of overtraining and use strategies such as variety and reduced intensity workouts to ensure player safety.

Marker's Comments (GCS)

This question was answered reasonably well with most students demonstrating a strong knowledge of the relevant syllabus points. This was a multidimensional question and required students to make connections and identify relationships within the question. Students who performed well in this question clearly justified why coaches needed to include periodisation in order to achieve optimal performance from their athletes – students needed to make this connection clear. Weaker responses simply described the components within periodisation and failed to link the components to the role that coaches have, why they are important and finally how varying components enhance sporting performances. Stronger responses cited specific examples. Many students did not write in paragraphs and lacked structure in their responses failing to link back to what the actual question was asking.