Personal Development, Health and Physical Education

General Instructions

- Reading time – 5 minutes
- Working time – 3 hours
- Write using blue or black pen
- Write your Centre Number and Student Number at the top of this page and page 10 and the Multiple Choice Answer Grid.

Total marks – 100

Section I Pages 2- 16
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 part

Part B – 40 marks
- Attempt Questions 21-22
- Allow about 1 hour and 10 minutes for this part

Section II Page 17-18
40 marks
- Attempt TWO questions from Questions 23-27
- Allow about 1 hour and 10 minutes for this section

1. What is the name of the disease which occurs from the build-up of fatty materials on the interior walls of the arteries?

(A) Hypertension

(B) Stroke

(C) Arteriosclerosis

(D) Atherosclerosis

2. Which diseases remain the leading causes of death?

(A) Mental health, cancers, cardiovascular diseases

(B) Cardiovascular diseases, cancers and respiratory diseases

(C) Cancers, respiratory diseases and mental health

(D) Cardiovascular diseases, cancers and diabetes

3. Major inequalities exist in the health status of Aboriginal and Torres Strait Islanders.
Which of the following are examples of these?

(A) Lower life expectancy, high death rates from injuries

(B) High death rates from injuries, low levels of mental health issues

(C) High death rates from injuries, high rates of skin cancer

(D) High death rates from injuries and low levels of education

4. Which of the following are included as two of the reasons for the increased popularity of alternative medicines?

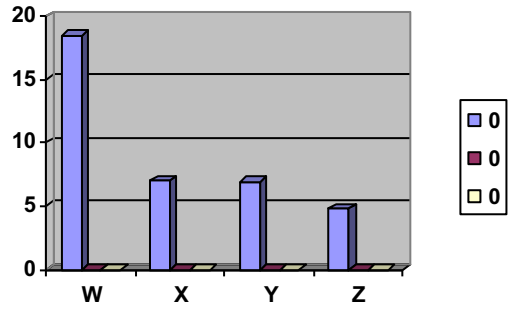
(A) Holistic nature, easy accessibility to synthetic drugs

(B) Holistic nature, strength of traditional beliefs

(C) Holistic nature, practitioners do not need to be qualified

(D) Holistic nature, less expensive than prescription medicines

5. This graph indicates the leading cause of death, in all ages in 2005 for males. Which disease would be represented by W?



a) Cerebrovascular disease
b) Colorectal cancer
c) Coronary heart disease

6. A community meeting to gather support for road calming devices on local streets, is an example of which area of the Ottawa Charter?

(A) Creating supportive environments

(B) Developing personal skills

(C) Increasing community capacity and empower the individual

(D) Strengthening community action

7. In a given population, cancer and cardiovascular disease are the leading causes of death and high levels of stroke, increased hypertension and a degree of disability. Which group are most at risk?

(A) Older People

(B) People with disabilities

(C) People living in rural and isolated locations

(D) Australians born overseas

8. Which of the following would be included in non-institutional health care?

(A) Community and public health services, dental care and psychiatric care hospitals

(B) Nursing homes, public hospitals and community and public health services

(C) Community and public health services, dental care and physiotherapy

(D) Nursing homes, public hospitals and physiotherapists

9. Which of the following is an example of the action area of the Ottawa Charter *reorienting health services*?

(A) Doctors and health professionals counselling people at a drug clinic

(B) Police setting up random breath testing units near hotels

(C) Nurses increasing their rounds at public hospitals

(D) Anti-smoking advertisements shown on television

10. Which of the following are examples of health promotions that focus on a settings approach?

(A) Occupational Health and Safety committees, the car industry working on safety devices.

(B) Health behaviour change being the sole responsibility of the individual, in-service training for health-care providers.

(C) Occupational Health and Safety committees, ban on smoking in restaurants and clubs.

(D) Occupational Health and Safety committees, in-service training for health-care providers.

11. A marathon runner is nearing the end of a 42km race. At the 40 km mark, (point X) he is in 2nd position and running at constant pace. At the 41km mark, (point Y) he picks up his pace for 300m to try and over take the leader and at the 42km mark, (point Z) he sprints the last 100m to finish the race. Which energy system is the major contributor of energy production at Points X, Y and Z?

(A) **X** – Aerobic **Y** – Aerobic **Z** – Lactic acid

(B) **X** – Aerobic **Y** – Lactic Acid **Z** – Lactic acid

(C) **X** – Aerobic **Y** – Lactic Acid **Z** – ATP PC

(D) **X** – Aerobic **Y** – ATP PC **Z** – ATP PC

12. An athlete participates in a training session that involves running 5 intervals of 800m, each run in 2 minutes, with a 6 minute rest. At the conclusion of the session, the athlete is breathing heavily.
Which statement below best explains the physiological changes taking place in her body?

(A) The athlete has exhausted her ATP supplies and is now in oxygen deficit

(B) The athlete has been working anaerobically and the heavy breathing is helping to replenish glycogen stores

(C) The athlete has been working anaerobically and the heavy breathing is helping break down accumulated lactic acid

(D) The athlete's heavy breathing is a result of maximal stroke volume and cardiac output

13. Which of the following resistance training routines will best develop the leg power of a long jumper?

(A) Develop leg strength first and follow up with power incorporating plyometrics

(B) Develop leg power first through plyometrics and follow up with absolute leg strength

(C) Use medium resistance 65 – 80% RM, with 8-10 reps at a slow exercise speed

(D) Use heavy resistance 80 – 90% RM, with 12 -20 reps at a fast exercise speed

14. Why is Proprioceptive Neuromuscular Facilitation (PNF) stretching the desired method of flexibility training for a warm up prior to athletic competition?

(A) PNF involves both the shortening and lengthening of muscle fibres and hence works both agonists and antagonists

(B) PNF provides minimal change to muscle fibres and hence is the safest method

(C) PNF incorporates isometric, static and ballistic stretches and hence provides most comprehensive stretch

(D) PNF stretching method invokes a 'stretch reflex' and hence allows greater range of motion

15. A number of athletes were tested to determine their maximal tolerance to the volume of lactic acid in the blood. The table below shows the results of this study.

Athlete	Maximal lactic Acid tolerance Measured in nmol / litre of blood
Cross Country Skier	20.0 nmol
1500m swimmer	17.5 nmol
5,000m runner	16.0 nmol
Professional footballer	14.0 nmol
C grade Footballer	7.0 nmol

What would the 'C grade footballer' need to focus on in his training to improve levels of tolerance to lactic acid?

(A) Continuous training and endurance resistance training

(B) Fartlek and interval training

(C) Interval training and strength resistance training

(D) Circuit and continuous training

16. There are a number of mechanisms in the body that occur due to exercising in excessive heat and humidity.
What signs or symptoms would be evident in a 'dehydrated marathon runner'?

(A) Vasodilation and high blood pressure

(B) Vasoconstriction and decreased body coordination

(C) Vasodilation and increased pulse

(D) Vasoconstriction and low blood pressure

17. A coach is teaching an associative learner a new skill which is difficult to perform and causes excessive fatigue.
Which practice method would you recommend to improve the skill levels of the learner?

(A) Massed rather than distributed practice

(B) Distributed rather than massed practice

(C) Accuracy rather than speed practice

(D) Part rather than whole practice

18. A learner participating in an intensive 5 week basketball program has been practicing her basketball shooting skills for 3 hours every day. Her average weekly success rate for shooting from the free throw line is:

WEEK	1	2	3	4	5
% Goals vs attempts	25%	27%	30%	29%	47%

By week 5, the learner is still making errors but not as many and is now able to recognise these errors.
What learning curve does the basketballer best conform to and what stage of learning do you consider her to be in now?

(A) Linear learning curve and a cognitive learner

(B) Positively accelerated learning curve and an associative learner

(C) Linear learning curve and an associative learner

(D) Positively accelerated learning curve and a cognitive learner

19. A professional tennis player is able to immediately feel if they have hit a good shot or serve.
What would be the best explanation for this occurrence?

(A) Their kinaesthetic sense - feedback to the player's brain from tendons and ligaments in arms and legs

(B) Their timing and anticipation – the player can predict the flight and pace of the ball

(C) Their consistency – the player has spent many hours practicing so they know the feel of a good shot

(D) Their mental approach – the player is skilled at recognising and responding to relevant clues

20. A coach sets up a series of objective soccer skills tests, to be conducted by forty 10 year olds, with the aim to select A, B and C grade teams. As a back-up, a group of selectors use subjective methods to select the 3 teams.
At the conclusion of the session, the coach and the selectors come up with the same teams.
What would be the reasons for this?

(A) The coaches skills tests are a reliable measure of soccer ability

(B) Both selectors and coach were able to determine the outcomes of a skilled performance

(C) Both selectors and coach used personal and prescribed criteria in judging soccer performance

(D) The coach's skills tests are a valid measure of soccer ability

Section I (continued)

Part B - 40 marks
Attempt Questions 21-22
Allow about 1 hour and 10 minutes for this part

Answer the question in the spaces provided.

In your answer you will be assessed on how well you;
- demonstrate an understanding of health and physical activity concepts
- apply the skills of critical thinking and analysis
- illustrate your answer with relevant examples
- present ideas in a clear and logical way

Marks

Question 21 - Core 1 Extended Responses (20 marks)

(a) Outline the health status of people living in rural and isolated locations. 4

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Marks

(b) Describe how the prevalence of condition and potential for change assist in identifying conditions to be classified as priority areas. **6**

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Marks

(c) Examine how *creating supportive environments* and *developing personal skills* can be applied to ONE of the following national health priority areas:

Diabetes
Injury
Asthma
Mental health
Arthritis and musculoskeletal conditions

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End of question 21

Question 22 – Factors affecting Performance (20 marks)

	Marks
(a) Describe the role that oxygen plays in converting carbohydrates into ATP.	**4**

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(b) Distinguish between the psychological states of 'anxiety' and 'arousal'. **6**

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(c) Critically analyse the 'Threshold training' principle while describing how a coach can practically apply this principle to an aerobic sport. **8**

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Question 22 (continued)

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End of question 22

Section II

40 marks
Attempt TWO questions from Questions 23-27
Allow about 1 hour and 10 minutes for this section.
Answer the question in a SEPARATE writing booklet. Extra writing booklets are available.

In your answer you will be assessed on how well you;
- demonstrate an understanding of health and physical activity concepts
- apply the skills of critical thinking and analysis
- illustrate your answer with relevant examples
- present ideas in a clear and logical way

Question 23 - The Health of Young People (20 marks) **Marks**

a) Identify how a range of youth cultures contribute in a positive manner to the development of young people. **3**

b) Discuss how socioeconomic status and employment affect the health of young people. **7**

c) Critically examine the requirements of social action as a skill for young people to attain better health in TWO areas of concern you have studied. **10**

Question 24 - Sport and Physical Activity in Australian Society (20 marks)

a) Identify reasons for the emergence of sport as big business. **3**

b) Discuss how the Olympic Games have been used to develop the national identity of countries. **7**

c) Sport has traditionally been considered a male domain. Critically examine how this has come to affect participation rates in sports that have become either male or female dominated. **10**

Question 25 – Sports Medicine (20 marks) **Marks**

a) Identify how the Inflammatory Response Process rejuvenates damaged tissue following a soft tissue injury. **3**

b) Discuss ways an athlete can be physically prepared for athletic competition, so that the risks of incurring an injury are minimised. **7**

c) As the doctor of a professional sporting team, you are asked to create a 'club policy' that must be adhered to by athletes returning from injury. Critically examine the key points that must be included in this policy and show how they can be practically applied. **10**

Question 26 – Improving Performance (20 marks)

a) Identify how training at an altitude of over 1000m can help improve an athlete's performance at sea level. **3**

b) Discuss an endurance athlete's key dietary considerations for both their 'pre-game' meal and to ensure they are adequately hydrated for competition. **7**

c) With reference to the *'competition'* or *'in-season'* phase of competition, critically examine the need to 'taper' an athlete's training program. **10**

Question 27 - Equity and Health

a) Identify how education contributes to inequities that are experienced by a range of populations. **3**

b) Discuss whether health funding should go to the areas where there is the greatest chance of success or to the area of greatest need. **7**

c) Critically examine the significant factors that impact upon the health of Aboriginal and Torres Strait islanders. **10**

Marking Guidelines

Section I
Part A – 20 marks
Questions 1-20 (1 mark each)

Question	Correct Response	Outcomes Assessed	Targeted Performance Bands
1	D	H1	2-3
2	B	H1	3-4
3	A	H3	3-4
4	B	H5	3-4
5	C	H1	2-3
6	D	H4	2-3
7	A	H2	3-4
8	C	H5	3-4
9	A	H4	4-5
10	D	H5	4-5
11	C	H7	3-4
12	C	H7	4-5
13	A	H10	5-6
14	D	H8	3-4
15	B	H10	4-5
16	C	H17	4-5
17	B	H9	3-4
18	B	H16	3-4
19	A	H9	5-6
20	D	H9	4-5

Exam Section	Question	Marks	Syllabus/Course outcomes	Content	Targeted Performance Bands	Answer
Section I Part A – Multiple Choice	1	1	H1	CVD	2-3	D
	2	1	H1	Epidemiology	3-4	B
	3	1	H3	Health inequities	3-4	A
	4	1	H5	Alternative health care	3-4	B
	5	1	H1	Cancer	2-3	C
	6	1	H4	Ottawa Charter	2-3	D
	7	1	H2	Groups at risk	3-4	A
	8	1	H5	Nature of health care	3-4	C
	9	1	H4	Ottawa Charter	4-5	A
	10	1	H5	Health promotion	4-5	D
	11	1	H7	Energy systems	3-4	C
	12	1	H7	Energy systems and types of training	4-5	C
	13	1	H10	Types of training	5-6	A
	14	1	H8	Flexibility training	3-4	D
	15	1	H10	Types of training	4-5	B
	16	1	H17	Hydration	4-5	C
	17	1	H9	Learning environment	3-4	B
	18	1	H16	Rates of skill acquisition	3-4	B
	19	1	H9	Skilled vs unskilled performers	5-6	A
	20	1	H9	Objective measurement of skill	4-5	D
Part B	21a	4	H2	Groups experiencing health	3-4	
	21b	6	H1, H5, H15	Identifying health priorities	3-4	
	21c	10	H4, H5, H14, H15	Ottawa Charter	5-6	
	22a	4	H7	Energy systems	2-3	
Exam Section	**Question**	**Marks**	**Syllabus/Course outcomes**	**Content**	**Targeted Performance Bands**	**Answer**
	22b	6	H11	Anxiety	3-4	
	22c	10	H7, H10	Principles of	5-6	

				training		
Section II	23a	3	H6	Nature of young people's lives	3-4	
	23b	7	H2, H5, H15	Social factors that impact on health of young people	3-4	
	23c	10	H4, H5, H14, H15, H16	Skills and actions	5-6	
	24a	3	H12	Emergence of a sport as a commodity	2-3	
	24b	7	H12, H16	Nationalism and sport	3-4	
	24c	10	H12, H16	Sport as a traditionally male domain	5-6	
	25a	3	H7, H13	Soft tissue injuries	2-3	
	25b	7	H8	Physical preparation and thermoregulation	4-5	
	25c	10	H8, H13	Sports policy and return to play	5-6	
	26a	3	H7, H10	Environmental considerations	3-4	
	26b	7	H11, H17	Dietary considerations	3-4	
	26c	10	H8, H10	Phases of competition	5-6	
	27a	3	H3	Factors that create health inequities	2-3	
	27b	7	H5, H14	Funding to improve health	4-5	
	27c	10	H5, H15, H16	Significant factors influencing the health of ATSI	5-6	

Section I
Part B - 40 marks
Question 21 - Core 1 Extended Responses
(a) Outline the health status of Australians living in rural and isolated locations. (4 marks)

Outcomes Assessed: H2
Targeted Performance Bands: 3-4

Criteria	Marks
• Excellent outline of key factors indicating the health status of Australians living in rural and isolated locations • Presents ideas in a clear and logical way • Illustrates answers with relevant examples	4
• Good outline of some factors indicating the health status of Australians living in rural and isolated locations • Presents ideas in a clear way • Illustrates answers with some examples	2-3
• Lists some factors relating to the health status of Australians living in rural and isolated locations • Illustrates answers with relevant examples	1
• NRI	0

Suggested Answer:
People who live in rural and isolated locations are more likely to have lower levels of education, be smokers, be physically inactive, drink alcohol in higher levels, have less access to medical services and personnel and have occupations that are of higher risk.

Question 21 (continued)
(b) Describe how the prevalence of condition and potential for change assist in identifying priority areas. (6 marks)

Outcomes Assessed: H1, H5, H15
Targeted Performance Bands: 3-4

Criteria	Marks
• Excellent description of how prevalence and potential for change assist identifying priority areas • Presents ideas in a clear and logical way • Illustrates answers with relevant examples	5-6
• Identifies how prevalence and potential for change assist identifying priority areas • Presents ideas in a clear way • Uses relevant examples	3-4
• Outlines how either prevalence or potential for change assist identifying priority areas • Lists some examples	2
• Lists some areas that relate to identifying priority areas	1
• NRI	0

Suggested Answer:
Prevalence is the number of cases of disease that exist in a defined population at a point of time.
Potential for change is when there is scope for people to improve their health as a result of a change of lifestyle factors. SES, employment status and access to health services and information provide people with the information to improve their health and reduce the burden of lifestyle diseases.
Prevalence rates indicate areas where the burden of disease weigh down a community and the potential for change exists within that community with assistance.

Question 21 (continued)

c) Examine how *creating supportive environments* and *developing personal skills* can be applied to ONE of the following national health priority areas: (8 marks)

Diabetes
Injury
Asthma
Mental health
Arthritis and musculoskeletal conditions

Outcomes Assessed: H4, H5, H14, H15

Targeted Performance Bands: 5-6

Criteria	Marks
• Examines how creating supportive environments and developing personal skills have been applied thoroughly to a NHPA • Presents ideas in a clear and logical way • Illustrates answers with relevant examples	7-8
• Demonstrates how creating supportive environments and developing personal skills have been applied to a NHPA • Presents ideas in a clear and logical way • Uses relevant examples	5-6
• Describes how creating supportive environments and developing personal skills have been applied to a NHPA • Demonstrates how either creating supportive environments or developing personal skills applies to a NHPA • Uses relevant examples	3-4
• Outlines how creating supportive environments and developing personal skills have been applied to a NHPA • Describes how either creating supportive environments or developing personal skills apply to a NHPA	1-2

Suggested Answer:

Students must focus on one of the following NHPA's: asthma, mental health, diabetes, injury, arthritis and musculoskeletal conditions.

Developing personal skills focus on the personal and social development of the individual. The aim is to educate, provide information and enhance the decision making skills of the individual. They empower a person to take control of their health by providing options to enhance it.

Creating supportive environments is an action area that focuses on the person's place of work, home and recreation. It relates to their lifestyle and the social and physical environment in which they live and its effect upon the health of their family, community and their own health. It is the action of promoting better health and how these actions impact upon their health status and the potential to address NHPAs.

Examples can be wide-ranging and need to relate specifically to the nominated NHPA.

Question 22 - Core 2 Extended Responses

a) Describe the role that oxygen plays in converting carbohydrates into ATP. (4 marks)

Outcomes Assessed: H7
Targeted Performance Bands: 2-3

Criteria	Marks
• Excellent description of the key role that oxygen plays in the production of energy via the aerobic pathway • Describes the important interaction between oxygen and CHO • Clearly identifies the change in energy efficiency via the Krebs Cycle • Accurately applies the process to the distinct needs of an endurance athlete • Uses detailed examples to support discussion	4
• Satisfactory description of the key role that oxygen plays in the production of energy via the aerobic pathway • Refers to the change in energy efficiency via the Krebs Cycle • Applies the process to the distinct needs of an endurance athlete • Uses examples to support discussion	3
• Shows some knowledge of the key role that oxygen plays in the production of energy via the aerobic pathway • Weakly applies the process to the distinct needs of an endurance athlete • Uses minimal examples to support discussion	2
• Weak outline • SRI	1

Suggested Answer:

- Oxygen is critical in providing maximal ATP production via the aerobic pathway. If oxygen is delivered to the working muscles (supply = demand) in sufficient quantities then:
    - The aerobic energy system is able to be sourced
    - The Krebs Cycle is an outcome of this O2 energy system, converting 1 molecule of Glycogen (CHO) into 38 ATP molecules
- Without oxygen present in sufficient quantities (O2 supply does not = demand) then:
    - The anaerobic energy systems (ATP PC & lactic acid systems) are used for ATP production
    - These systems convert 1 molecule of glycogen (CHO) into only 1ATP molecule (PC) or 2ATP molecules (L.A)
    - Lactic acid is accumulated
    - PCs split and cannot replenish

Question 22 (continued)

b) Distinguish between the psychological states of 'anxiety' and 'arousal'.
(6 marks)

Outcomes Assessed: H11
Targeted Performance Bands: 3-4

Criteria	Marks
• Shows excellent knowledge and understanding in identifying the key aspects of both anxiety and arousal in detail (including a state and a trait anxiety) • Excellent comparison and contrast of the 2 states • Clearly shows how both states can affect athletic performance • Describes a number of ways to raise and lower arousal • Describes a number of ways to reduce anxiety • Uses detailed examples to support discussion	6
• Accurately identifies the key aspects of both anxiety and arousal in detail (including a state and a trait anxiety) • Detailed comparison and contrast of the 2 states • Shows how both states can affect athletic performance • Describes ways to raise and lower arousal • Describes ways to reduce anxiety • Uses detailed examples to support discussion	5
• Identifies the key aspects of both anxiety and arousal • Applies 1 state better than the other • Satisfactorily compares and contrasts the 2 states • Shows how both states can affect athletic performance • Refers to ways to raise and lower arousal • Refers to ways to reduce anxiety • Uses some examples to support discussion	4
• Some description of the anxiety and arousal • Some distinction between 2 states • Weak application on their affects on sports performance • Minimal use of examples to support discussion	3
• Limited discussion • Some relevant information	1-2

Question 22 (continued)

Suggested answer:

- ❖ Comparing and contrasting anxiety and arousal
    - o Arousal is purely an emotion, while arousal can be both physiologically and psychologically based

Anxiety	Arousal
An emotion experienced when fearful, apprehensive or when there is a perceived threat	An indicator of a person's readiness for participation and action
An emotion that causes: - Increased (↑) heart rate - faster but shallower breathing - ↑ body temp - ↑ muscle tension	A mental and physical state of being
May be related to a specific situation (a state) or specific personality (a trait)	May be too high or too low. Ideal arousal is mid range Graphically depicted by 'Inverted U hypothesis'
Harmful to performance in sporting situations – impacts - muscle coordination - decision making - ↑ fear of failure	A certain level of arousal is needed to attain peak performance. Level of arousal is determined by type of skill – gross vs fine motor or, individual personality
Managing anxiety techniques - focusing skills - mental rehearsal - visualisation - relaxation - goal setting	Managing arousal techniques - raisers – loud voice, simulate game practices, self focus, - reducers – soft voice, promote task familiarity, relaxation, keep errors in perspective, build self confidence

Question 22 (continued)

c) Critically analyse the 'Threshold training' principle while describing how a coach can practically apply this principle to an aerobic sport. (8 marks)

Outcomes Assessed: H7, H10

Targeted Performance Bands: 5-6

Criteria	Marks
• Demonstrates superior knowledge in analysing and applying threshold training • Clearly and accurately prescribes aerobic training types (continuous, Fartlek and interval training) options to a coach and is able to correctly apply the correct variables of threshold training to these methods • Demonstrates thorough understanding of both aerobic and anaerobic threshold zones and distinguishes training intensity requirements for both • Clearly identifies the aspects of performance that will be improved as a result of incorporating these in an athlete's training program – tolerance to lactic acid, aerobic and anaerobic endurance and how these can ↑ performance • Demonstrates excellent practical application of syllabus content in relation to an appropriate endurance sport or athletic event • Uses detailed examples to support discussion	7-8
• Analyses the key features in analysing and applying threshold training • Prescribes aerobic training types (continuous, Fartlek and interval training) options to a coach and is able to apply the threshold training to these methods • Demonstrates an understanding of both aerobic and anaerobic threshold zones and distinguishes some training intensity requirements for both • Identifies the aspects of performance or benefits that will be improved as a result of incorporating this in an athlete's training program • Demonstrates sound practical application of syllabus content in relation to an appropriate endurance sport or athletic event • Uses examples to support discussion	5-6
• Identifies some features in analysing and applying threshold training • Shows some performance benefits that will be improved as a result of incorporating this in an athlete's training program • Demonstrates satisfactory practical application of syllabus content in relation to an appropriate endurance sport or athletic event • Uses some examples to support discussion	3-4
• Outlines some features in analysing and applying threshold training • Briefly describes performance benefits that will be improved as a result of incorporating this in an athlete's training program • Demonstrates poor practical application of syllabus content in relation to an appropriate endurance sport or athletic event • Limited use of examples to support	1-2

Question 22 (continued)

Suggested answer:

THRESHOLD TRAINING

- **Aerobic threshold**
  - The minimum amount of exercise required to produce an improvement in your fitness is called the aerobic threshold
  - Can be measured with a heart rate monitor
  - ~ 60% MHR
  - Intensity of exercise allows oxygen supply to meet oxygen demands
  - Maximal training in this zone ~ 80%MHR

- **Anaerobic threshold (AnT)**
  - Level of intensity where accumulation of lactic acid in blood ↑ very quickly
  - Can be measured with a heart rate monitor
  - ~ 85% MHR
  - Intensity of exercise does not allow oxygen supply to meet oxygen demand – hence accumulation of lactic acid
  - Maximal training in this zone ~ 80%MHR
  - Interval training – ensures athlete trains for periods in AnT to develop an increased tolerance to Lactic Acid - 4+ mmol/lit of blood
  - Links threshold training, to specificity and progressive overload
  - Aspects of performance that will be improved as a result of incorporating these in an athlete's training program ie. tolerance to lactic acid, aerobic and anaerobic endurance and how these can improve performance
  - Other key points: how LA is accumulated as a result of an ↑ in intensity, training should mirror the energy requirements of a game, maximal aerobic gains are made if training is "on or just below the AnT ~ 85% MHR, taking above AnT ↑ tolerance to LA by working in the presence of LA 4mmol/l+ → 16

Question 23 – The Health of Young People (20 marks)
a) Identify how a range of youth cultures contribute in a positive manner to the development of young people. (3 marks)

Outcomes Assessed: H6
Targeted Performance Bands: 3-4

Criteria	Marks
• Identifies how a range of cultures contribute to development of young people • Presents ideas in a clear and logical way • Illustrates answers with relevant examples	3
• Outlines a number of youth cultures and how they contribute to young people's development • Uses relevant examples	2
• Lists some youth cultures or outlines the development of young people	1
• NRI	0

Suggested Answer:
Youth cultures are essential for young people to be able to express themselves, develop and confirm their identity and improve their self-confidence and self-esteem. 'Belonging' allows them to develop their own language and styles of clothing that empower them. Positive contributions can be to their self identity and confidence and esteem.

Examples can include homies, surfies, Goths and punks plus a number of local groups unique to their area or community.

Question 23 (continued)

b) Discuss how socioeconomic status and employment affect the health of young people. (7 marks)

Outcomes Assessed: H2, H5, H15
Targeted Performance Bands: 3-4

Criteria	Marks
• Excellent explanation of how SES and employment affect the health of young people • Presents ideas in a clear and logical way • Illustrates answers with relevant examples	6-7
• Describes how SES and employment affect the health of young people. • Presents ideas in a clear way • Uses relevant examples	4-5
• Outlines how SES and employment affect the health of young people. • Uses examples	2-3
• Lists some of the effects of either SES or employment or the health of young people in general.	1
• NRI	0

Suggested Answer:

Socioeconomic status refers to the place where people re based in society based upon their income, education and economic factors. Young people experience good health according to Australia's Health 2008 and yet there have been major changes in our society in relation to their status. High demand for consumer goods such as mobile phones, iPods, designer clothes, easily accessible credit and fast food have led to many young people being disadvantaged socially and financially. This can equate to a lower standard of living and an effect upon their health. Conversely, these more accessible communication networks can make young people better informed in regards to their health and improve their overall status.

Employment structures have changed dramatically in recent times and young people are now emerging in a world where there is more part-time, casual or permanent part-time work. Unemployment rates are dramatically high for young people and this has a detrimental effect upon the mental health of these people. Self-esteem and self-confidence are undermined by a lack of employment prospects. Education is the key to improving this situation and some recent changes by the Government has encouraged greater participation in studies and further education for young people.

c) Critically examine the requirements of social action as a skill for young people to attain better health in TWO areas of concern you have studied. (10 marks)

Outcomes Assessed: H4, H5, H14, H15, H16
Targeted Performance Bands: 5-6

Criteria	Marks
• Critically examines how social actions assist young people attain better health through TWO areas of concern • Presents ideas in a clear and logical way • Illustrates answers with relevant examples	9-10
• Demonstrates how social actions assist through TWO areas of concern • Presents ideas in a clear and logical way • Uses relevant examples	7-8
• Describes how social actions assist through TWO areas of concern OR • Examines how social action assists in only one area of concern • Uses relevant examples	4-6
• Outlines how social action affects the health of young people OR • Describes an area of concern studied.	2-3
• Lists some information in relation to an area of concern	1
• NRI	0

Suggested Answer:
Areas where social action assists young people attain better health is through supportive environments with local councils, State and Federal Governments and youth workers. Access to health services provides young people with professional help eg: doctor's in Sydney's eastern suburbs have developed a youth access service to encourage young people to seek help from their GPs. Legislation and public policy have been designed to assist young people seek help and access health literacy that can assist them. Health promotion campaigns such as *Mind Matters* have provided assistance to young people.

Question 24 – Sport and Physical Activity in Australian Society (20 marks)

a) Identify reasons for the emergence of sport as big business. (3 marks)

Outcomes Assessed: H12

Targeted Performance Bands: 2-3

Criteria	Marks
• Identifies how sport has emerged as big business • Presents ideas in a clear and logical way • Illustrates answers with relevant examples	3
• Outlines how sport has emerged as big business • Uses relevant examples	2
• Lists some examples of how sport has emerged as big business	1
• NRI	0

Suggested Answer:

Sport has become dominated by big business in recent times as it is an easy and accessible advertising strategy for companies. Sports are watched by millions of people and advertising has a strong effect upon those watching. Examples include Olympic games, NRL, AFL, Super 14 Rugby Union, cricket with one-day and 20/20 competitions.

b) Discuss how the Olympic games have been used to develop the national identity of countries. (7 marks)

Outcomes Assessed: H12, H16

Targeted Performance Bands: 3-4

Criteria	Marks
• Excellent discussion as to how the Olympic games have impacted upon the national identity of countries • Presents ideas in a clear and logical way • Illustrates answers with relevant examples	6-7
• Describes how the Olympic games have developed national identity • Presents ideas in a clear way • Uses relevant examples	4-5
• Outlines how the Olympic games have impacted upon the national identity of countries • Uses examples	2-3
• Lists some of the effects of the Olympic games upon nations	1
• NRI	0

Question 24 (continued)
Suggested Answer:
The Olympic games provides a platform for countries to showcase the very best athletes through a diverse range of sports. The games have a huge global audience over the duration and provide the elite athletes of all sports to compete on a world stage. Countries such as the African nations and their elite distance runners, USA and their all round sporting ability, Australia and their swimming prowess are examples of the forging of national identity. Winter Olympic excellence can also be discussed especially by small nations such as Lichtenstein in skiing and the Nordic countries in a variety of Winter Olympic disciplines.
Other examples should showcase relationship between the national identity and their sporting excellence at the Olympic games.

c) Sport has traditionally been considered a male domain. Critically examine how this has come to affect participation rates in sports that have become either male or female dominated. (10 marks)

Outcomes Assessed: H12, H16
Targeted Performance Bands: 5-6

Criteria	Marks
• Critically examines how participation rates in sport have been affected due to the increase in sport participation rates • Presents ideas in a clear and logical way • Illustrates answers with relevant examples	9-10
• Demonstrates how participation rates have been affected due to the increase in sport participation rates • Presents ideas in a clear and logical way • Uses relevant examples	7-8
• Describes how participation rates have been affected due to the increase in sport participation rates • Uses relevant examples	4-6
• Outlines how participation rates have been affected due to the increase in sport participation rates	2-3
• Provides some relevant information about sport participation rates	1
• NRI	0

Suggested Answer:
There has been a challenge to the traditional domain of male domination in sports by women. They have challenged stereotypes of competitors such as boxing, rugby, soccer and cricket. The emergence of these competitors and competitions have provided a platform for junior athletes to aspire to higher representative honours and in many cases Olympic or World Cup competitions.
Consider also the role of the media and the allocation of space and time in newspapers, on TV, in the radio and internet and the effect this has on the challenges made to male dominated sports. Examples may include the Women's World Cup of cricket, Olympic coverage and Rugby World Cup for Women.

Question 25 – Sports Medicine (20 marks)

a) Identify how the Inflammatory Response process rejuvenates damaged tissue following a soft tissue injury. (3 marks)

Outcomes Assessed: H7, H13
Targeted Performance Bands: 2-3

Criteria	Marks
• Excellent explanation of the Inflammatory Response (IR) process in soft tissue • Clearly identifies the phases of IR • Supports points with detailed examples	3
• Satisfactory description of the Inflammatory Response (IR) process • Identifies some of the progressions of the IR • Supports points with examples	2
• Demonstrates some knowledge of overuse injuries and their signs and symptoms	1

Suggested answer:

- The IR follows immediately when there is damage to soft tissue and follows 3 phases:
  - Phase 1 – Inflammatory stage
  - Phase 2 – Repair and regenerative stage
  - Phase 3 – Remodelling stage

Question 25 (continued)

b) Discuss ways an athlete can be physically prepared for athletic competition, so that the risks of incurring an injury are minimised. (7 marks)

Outcomes Assessed: H8

Targeted Performance Bands: 4-5

Criteria	Marks
• Clearly identifies all the points related to the physical preparation of an athlete as a preventative measure to incurring an injury and is able to practically apply these issues in great depth • Demonstrates a superior knowledge of sports medicine principles and terminology • Supports all key points with relevant examples	7
• Identifies most the points related to the physical preparation of an athlete as a preventative measure to incurring an injury and is able to practically apply these issues • Demonstrates a sound knowledge of sports medicine principles and terminology • Supports key points with relevant examples	5-6
• Identifies some points related to the physical preparation of an athlete as a preventative measure to incurring an injury • Demonstrates a weak knowledge of sports medicine principles and terminology	3-4
• Some relevant information	1-2

Answer should include:

- ❖ Physical preparation – skill and technique, safe sporting movement, flexibility, endurance, strength, sport specific requirements, individual participants needs, warm up, warm down.

Question 25 (continued)

c) As the doctor of a professional sporting team, you are asked to create a 'club policy' that must be adhered to by athletes returning from injury. Critically examine the key points that must be included in this policy and show how they can be practically applied**.** (10 marks)

Outcomes Assessed: H8, H13
Targeted Performance Bands: 5-6

Criteria	Marks
• Superior knowledge of the measurable and observable signs of when an athlete is ready to return to play showing excellent discussion and practical application of its key points • Demonstrates a solid link between return to play and sports policy in an injury preventative action • Refers in proficient detail to the following: physical preparation, policy, equipment, thermoregulation and taping and clearly applies them to a sport of their choice • Excellent use of sports medicine terminology	10
• Very good knowledge of the measurable and observable signs of when an athlete is ready to return to play with good discussion and practical application of its key points • Demonstrates a clear link between return to play and sports policy in an injury preventative action • Refers in detail to the following: physical preparation, policy, equipment, thermoregulation and taping and clearly applies them to a sport of their choice • Very good use of sports medicine terminology	8 - 9
• Demonstrates a satisfactory understanding of the measurable and observable signs of when an athlete is ready to return to play showing with some discussion and practical application of its key points • Demonstrates some link between return to play and sports policy in an injury preventative action • Refers in brief detail to the following: physical preparation, policy, equipment, thermoregulation and taping and clearly applies them to a sport of their choice • Some use of sports medicine terminology	6 -7

Question 25 (continued)

• Some knowledge of the measurable and observable signs of when an athlete is ready to return to play showing with some minimal discussion and practical application of its key points • Fails to establish a link between return to play and sports policy in an injury preventative action • Weak use of sports medicine terminology	4 - 5
• Limited knowledge and application of when an athlete is ready to return to play • Does not use sports medicine terminology	2 - 3
• Some relevant information	1

Answer should include:

- ❖ Return to play
  - ▪ Indicators of readiness to return to play
  - ▪ Monitoring progress
  - ▪ Taping
  - ▪ Specific warm up procedures
  - ▪ Specifically designed skills test
  - ▪ Comparison of pre and post injury fitness test results
  - ▪ Distinguishes measurable or observable signs
- ❖ Policy
  - ▪ Must train with team for the week in order to play
  - ▪ Clearance from team doctor and trainer
  - ▪ Return through lower grades
  - ▪ Attain minimum fitness and skill standards
  - ▪ Monitor recovery after a previous training session prior to match
  - ▪ MRI /ultrasound reports

Question 26 – Improving Performance (20 marks)

a) Identify how training at an altitude of over 1000m can help improve an athlete's performance at sea level. (3 marks)

Outcomes Assessed: H7, H10
Targeted Performance Bands: 3-4

Criteria	Marks
• Accurately identifies, with extensive knowledge, how altitude training can improve the performance of an athlete • Clearly prescribes and practically applies the correct method for training at altitude • Justifies the inclusion of environmental considerations in an athlete's training program	3
• Satisfactorily identifies, with sound knowledge, how altitude training can improve the performance of an athlete • Prescribes some methods for training at altitude • Justifies the inclusion of environmental considerations in an athlete's training program	2
• Demonstrates weak knowledge of how altitude training can improve the performance of an athlete	1

Suggested answer:

- Altitude training over 100m:
    - Creates a haematocritic effect – increasing the amount of red blood cells in the blood, thereby improving the bloods ability to transport O2 to working muscles – resulting in an improved endurance capability
    - Mimics the same effect as blood doping, but in a legal, moral and ethical way
    - Environmental – acclimatising the athlete the athlete to the rarefied O2 if competing at altitude

Question 26 (continued)

b) Discuss an endurance athlete's key dietary considerations for both their 'pre-game' meal
and to ensure they are adequately hydrated for competition. (7 marks)

Outcomes Assessed: H11, H17
Targeted Performance Bands: 3-4

Criteria	Marks
• Clearly analyses the dietary and hydration needs of an endurance athlete using extensive knowledge • Correctly justifies the need to carbohydrate load and prescribes the correct routine to facilitate this • Demonstrates a superior ability to practically apply key points raised • Supports all key points with relevant examples	7
• Good analysis of the dietary and hydration needs of an endurance athlete using sound knowledge • Justifies the need to carbohydrate load and prescribes the correct routine to facilitate this • Demonstrates an ability to practically apply key points raised • Supports with relevant examples	5-6
• Satisfactory analysis of the dietary and hydration needs of an endurance athlete • Makes some justification as to the adjustments and additions to an athlete's diet and hydration techniques • Provides some examples to support points	3-4
• Limited knowledge and application of some dietary and hydration strategies and fails to provide a practical application of its key points	1-2

Answer should include:

- Pre game meal
  - 4 hours prior to event
  - Mainly complex CHOs
  - Avoid foods high in fat and protein
  - 'carbohydration' ideal
  - Avoid introducing untried and new foods
  - Most effective if CHO loading has occurred in preceding days
- Hydration
  - Ensure at least 500ml -1 litre prior to competition
  - More if high humidity
  - H2O is best
  - Avoid caffeine and alcohol
  - Avoid salt tablets and salt replenishment sports drinks

Question 26 (continued)
c) With reference to the 'competition' or 'in-season' phase of competition and critically examine the need to 'taper' an athlete's training program. (10 marks)

Outcomes Assessed: H8, H10
Targeted Performance Bands: 5-6

Criteria	Marks
• Superior examination of the training required in the phase of competition, with extensive knowledge • Identifies all the key features of each training phase and relates these to benefits gained for competition • Excellent justification of the need for tapering in training and clearly prescribes the correct method to do so • Displays excellent knowledge and application of the syllabus • Supports all key points with relevant examples	9-10
• Accurately examines the training required in the phase of competition • Identifies most of the key features of the training phase and relates these to benefits gained for competition • Justifies the need for tapering training and details the correct method to do so • Displays very good knowledge and application of the syllabus • Supports most points with relevant examples	7-8
• Satisfactory examines the training required in the phase of competition • Identifies some features of each training phase • Satisfactory justification of the need for tapering in training • Uses some examples	5-6
• Fails to clearly examine the training required in the phase of competition • Incorrectly identifies some features of each training phase • Minimal justification for the need to taper training	3-4
• Recalls simple facts with brief descriptions and limited discussion	1-2

Answer should include:

- Competition Phase (in season)
  - Maintain fitness
  - Lower volume, maximal intensity
  - Shorter duration sessions – mirror competition demands
  - Small games useful
- Tapering
  - Allows tissue to rebuild and full replacement of energy stores
  - Involves reduction in training volume and intensity
  - Should occur 7-14 days prior to competition, with no effect on strength and power

Question 27 - Equity and Health (20 marks)

a) Identify how education contributes to inequities that are experienced by a range of populations. (3 marks)

Outcomes Assessed: H3
Targeted Performance Bands: 2-3

Criteria	Marks
• Identifies how education contributes to inequities • Presents ideas in a clear and logical way • Illustrates answers with relevant examples	3
• Outlines how education contributes to inequities • Uses relevant examples	2
• Lists how education contributes to inequities	1
• NRI	0

Suggested Answer:
Education, or a lack of it, contributes to inequities as population groups who are poorly educated suffer from a higher level of mental health problems and a various range of lifestyle diseases. Examples include Aboriginal and Torres Strait islanders who leave school at an early age on average and have a range of inequities.

Question 27 (continued)
b) Discuss whether health funding should go to the areas where there is the greatest chance of success or to the area of greatest need. (7 marks)

Outcomes Assessed: H5, H14
Targeted Performance Bands: 4-5

Criteria	Marks
• Excellent discussion of health funding and the area where there is greatest chance for success • Presents ideas in a clear and logical way • Illustrates answers with relevant examples	6-7
• Describes how health funding is provided and the area where there is greatest chance for success • Presents ideas in a clear way • Uses relevant examples	4-5
• Outlines how health funding is provided and may draw some conclusions as to where it may be successful • Uses examples	2-3
• Lists some of the areas where health funding is provided	1
• NRI	0

Suggested Answer:
Health funding requires a balance between curative health and health promotion. This balance means that monies constantly need to be directed towards treating current health priority areas. This is done through PBS, health care grants to state and territory governments for public hospitals and other health services and rebates for private health.

Health promotion or preventative health has a long term benefit to the individual and community. The money spent here provides people with the power to control their health, make good decisions about their health and reduce the overall cost of health and reduce the burden on the government.

Question 27 (continued)
c) Critically examine the significant factors that impact upon the health of Aboriginal and Torres Strait islanders. (10 marks)

Outcomes Assessed: H5, H15, H16
Targeted Performance Bands: 5-6

Criteria	Marks
• Critically examines significant factors that impact upon the health of ATSIs • Presents ideas in a clear and logical way • Illustrates answers with relevant examples	9-10
• Demonstrates the significant factors that impact upon the health of ATSIs • Presents ideas in a clear and logical way • Uses relevant examples	7-8
• Describes how there are significant factors that impact upon the health of ATSIs • Uses relevant examples	4-6
• Outlines how there are factors that impact upon the health of ATSIs	2-3
• Provides some relevant information the health of ATSIs	1
• NRI	0

Suggested Answer:

Significant factors include poor living conditions, poverty, unemployment, education standards, colonisation, dispossession, discrimination, maintaining culture, importance of land, funding not commensurate with need, hospitalisation rate indicating failure of other levels of health system or traditional understanding about health.