



HIGHER SCHOOL CERTIFICATE EXAMINATION

1997

**PERSONAL
DEVELOPMENT,
HEALTH, AND PHYSICAL
EDUCATION**

2 UNIT

*Time allowed—Three hours
(Plus 5 minutes reading time)*

DIRECTIONS TO CANDIDATES

Section I (20 marks)

- Attempt ALL questions.
- Mark your answers in pencil on the Answer Sheet provided.
- Each question is worth 1 mark.

Section II (60 marks)

- Attempt ALL questions.
- Answer the questions in the spaces provided in this paper.
- Each question is worth 15 marks.
- Write your Student Number and Centre Number in the spaces provided on the first page of each question.

Section III (20 marks)

- Attempt ONE question.
- Answer the question in a *separate* Writing Booklet.

SECTION I

(20 Marks)

Attempt ALL questions.

Each question is worth 1 mark.

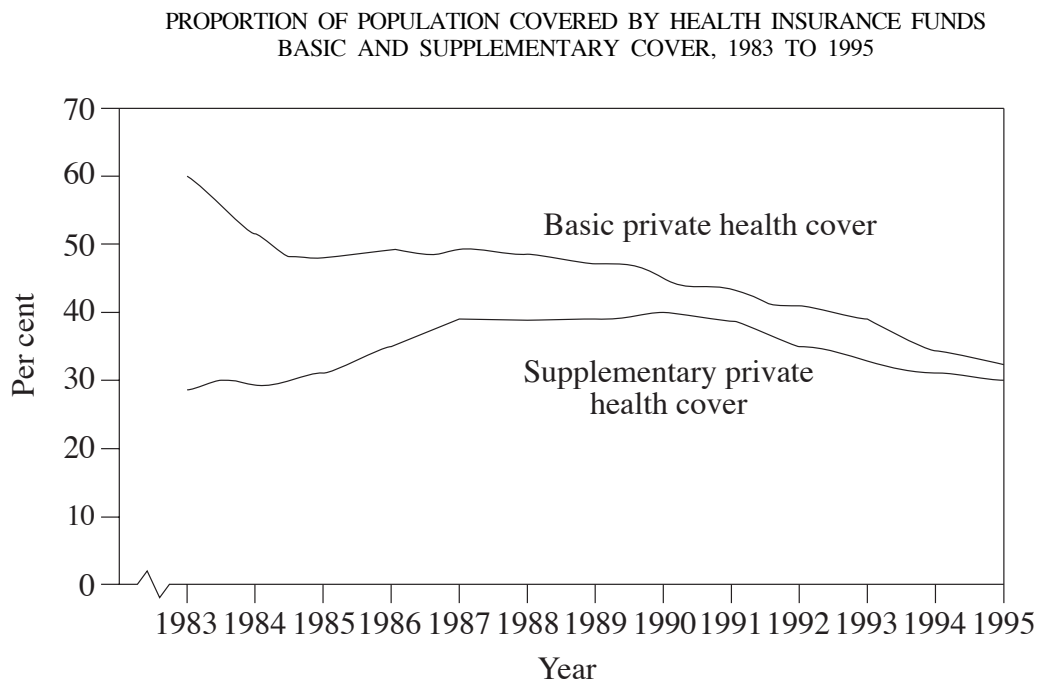
Mark your answers in pencil on the Answer Sheet provided.

Select the alternative A, B, C, or D that best answers the question.

1. An emerging community health issue in Australia is

- (A) dental caries among children
- (B) drink driving among females
- (C) heart disease among the elderly
- (D) lung cancer among adults

2. Study the graph below.



Private Health Insurance Administration Council

Australia's Health 1996: the fifth biennial report of the Australian Institute of Health and Welfare,
Australian Institute of Health & Welfare, AGPS 1996, p131. Commonwealth of Australia copyright reproduced by permission.

Between 1983 and 1995, the most rapid decline in basic private health insurance in Australia was due to the

- (A) introduction of Medicare.
- (B) increased cost of private health insurance.
- (C) introduction of supplementary private health insurance.
- (D) reduced advertising of private health funds.

3. Which of the following health promotion strategies is an example of a tertiary prevention measure?
- (A) A drink-driving media campaign
 - (B) Regular breast self-examination
 - (C) An influenza immunisation program
 - (D) A cardiac rehabilitation program
4. Children aged 1–14 years are most frequently hospitalised as a result of
- (A) digestive illness and poisoning.
 - (B) mental illness and circulatory disorders.
 - (C) musculoskeletal disorders and cancers.
 - (D) respiratory illness and injury.
5. The World Health Organisation has a global policy *Health for All by the Year 2000*. This policy calls on participants to
- (A) establish a central body to control all health initiatives.
 - (B) focus on the treatment of degenerative diseases.
 - (C) involve the community in the formation and implementation of health strategies.
 - (D) use developed countries to manage health initiatives in developing countries.
6. The single greatest risk factor for cardiovascular disease (CVD) that can be modified is
- (A) alcohol consumption.
 - (B) exposure to passive smoking.
 - (C) lack of physical activity.
 - (D) use of oral contraceptives.
7. The most effective approach to the reduction of road trauma involves
- (A) media images that use shock messages to change attitudes.
 - (B) education programs that focus on improving attitudes and behaviours.
 - (C) legislation that increases the cost of alcohol.
 - (D) vehicle registration procedures that improve the roadworthiness of cars.

- 8.** The mortality rates of males and females are MOST similar in the area of
- (A) lung cancer.
 - (B) motor vehicle accidents.
 - (C) stroke.
 - (D) suicide.
- 9.** The Government has set a target for a reduction in sports-related injuries. Which of the following would be the most useful indicator of progress towards this target?
- (A) The proportion of participants in high risk activities using protective equipment
 - (B) The number of community sport personnel gaining coaching accreditation
 - (C) The average fitness levels of those participating in sports activities
 - (D) The combined hospital admission rates for all causes of injury
- 10.** Prostate cancer is considered a priority cancer because it
- (A) affects equal numbers of men and women.
 - (B) affects people who are sexually active.
 - (C) is easily prevented.
 - (D) is increasing in incidence.
- 11.** A major characteristic of performers at the cognitive stage of skill acquisition is that they are
- (A) unable to adapt performance in open situations.
 - (B) unlikely to benefit from a closed learning environment.
 - (C) able to recognise errors in personal performance.
 - (D) likely to acquire an understanding of the nature of the skill through practice.
- 12.** A skilled performer's kinaesthetic sense provides feedback that is
- (A) concurrent and intrinsic.
 - (B) concurrent and related to knowledge of results.
 - (C) delayed and related to knowledge of performance.
 - (D) delayed and extrinsic.

- 13.** Terry and Huong participated in a pre-test and post-test for a 100-metre run. Both tests were conducted under identical conditions. The results of these tests are shown in the following table.

TIMES FOR 100-METRE RUN

	<i>Terry</i>	<i>Huong</i>
August 1997	15.7 seconds	15.1 seconds
October 1997	14.7 seconds	14.7 seconds

Which of the following statements is most correct?

- (A) Terry and Huong improved at the same rate.
 - (B) Terry's percentile ranking improved by 10 points.
 - (C) An objective measure of appraisal was used.
 - (D) The testing procedure lacked reliability.
- 14.** The hereditary factors most suitable for performance in the high jump at the elite level are
- (A) mesomorphy with a high percentage of fast-twitch muscle fibres.
 - (B) ectomorphy with a high percentage of slow-twitch muscle fibres.
 - (C) mesomorphy with a high percentage of red muscle fibres.
 - (D) ectomorphy with a high percentage of white muscle fibres.

15. A tennis player applies ice packs during rest periods to assist in body temperature regulation. This cools the player by

- (A) conduction.
- (B) convection.
- (C) evaporation.
- (D) vasoconstriction.

16. The following table shows a resistance-training program using weights.

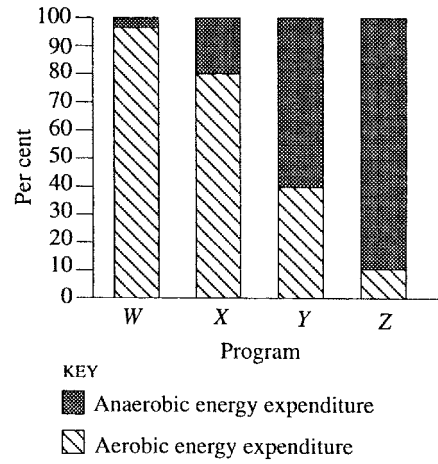
Number of sets	5
Repetitions	4
Load	Maximum resistance that could be lifted six times

This resistance-training program is best suited to

- (A) shot put.
 - (B) hockey.
 - (C) 1500-metre swimming.
 - (D) rowing.
- 17.** A squat exercise involves moving from a seated position to a standing position. This involves an
- (A) isometric contraction of the hamstrings.
 - (B) isometric contraction of the quadriceps.
 - (C) eccentric contraction of the hamstrings.
 - (D) eccentric contraction of the quadriceps.

18. The following graph compares the energy expended in training programs W, X, Y, and Z.

ESTIMATED PERCENTAGE OF AEROBIC AND ANAEROBIC
ENERGY EXPENDITURE IN TRAINING PROGRAMS

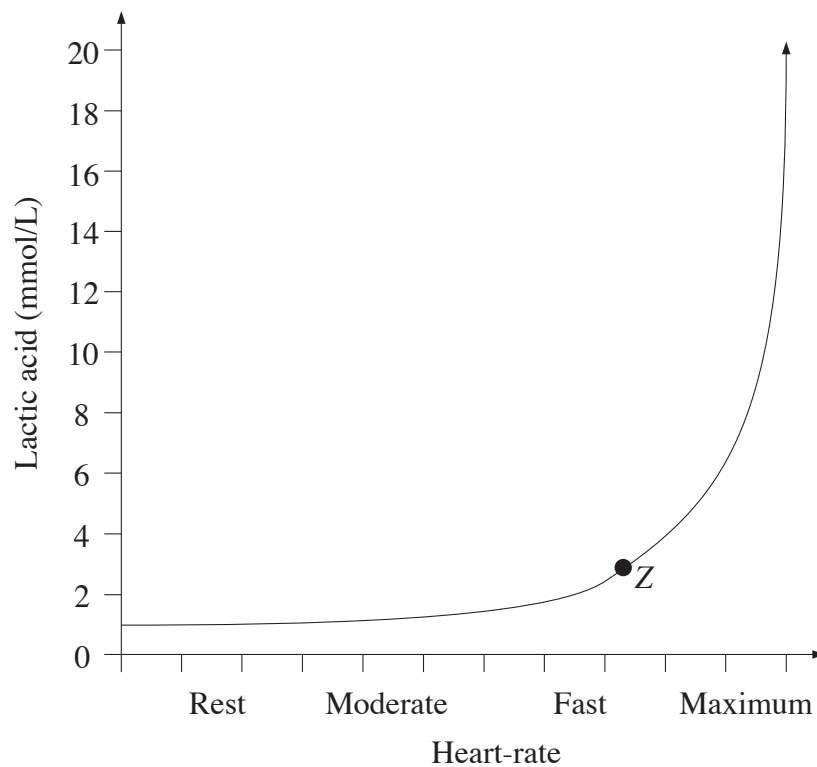


A cyclist competing in a three-hour endurance road race must be prepared for sprint surges throughout the event.

Which one of the training programs would be most suited to the cyclist's performance needs?

- (A) W
- (B) X
- (C) Y
- (D) Z

19.

HEART-RATE RESPONSE AND LACTIC ACID
ACCUMULATION DURING EXERCISE

'Smart Sport', de Castella, Clews & Gascoigne, RWM Publishing 1996.

The point labelled Z on the graph represents the

- (A) aerobic threshold.
 - (B) anaerobic threshold.
 - (C) training heart-rate.
 - (D) training threshold.
20. Aerobic glycolysis is the process of producing ATP by breaking down muscle glycogen in the
- (A) absence of oxygen, producing lactic acid.
 - (B) absence of oxygen, producing triglycerides.
 - (C) presence of oxygen, producing lactic acid and carbon dioxide.
 - (D) presence of oxygen, producing pyruvic acid.

QUESTION 21. (Continued)

Marks

[illegible]

5

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Question 22 continues on page 14

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QUESTION 23. (Continued)

Marks

[illegible]

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Marks

(b) Training for sport at an elite level can be enhanced by including a variety of approaches. Briefly outline the types of training that would provide this variety when developing the energy systems used by an elite tennis player.

QUESTION 24. (Continued)

Marks

- 5

[illegible]

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SECTION III

Marks

(20 Marks)

Attempt ONE question.

Answer the question in a *separate* Writing Booklet.

Each question is worth 20 marks.

QUESTION 25. First Aid and Sports Injuries

- | | |
|--|-----------|
| (a) A school cross-country carnival is to be held during summer. | 15 |
| (i) Discuss the safety strategies the carnival manager would need to implement prior to, and on the day of, the carnival.

(ii) On the day of the carnival, TWO competitors cross the finishing line at the same time. One has signs and symptoms of an asthma attack; the other complains of severe chest pains. Explain the management practices and priorities you would implement to deal with this situation. | |
| (b) After an injury, an athlete undergoes a rehabilitation program. What would be the indicators that the athlete is ready to return to competition? | 5 |

QUESTION 26. Community Health Issues

- | | |
|---|-----------|
| (a) You have been appointed to a committee to plan health services for children in your local area. Describe the fieldwork techniques that you would use to identify the health needs of children. Justify your approach. | 10 |
| (b) Evaluate the provision of health services in a specific community or region you have studied. What strategies would you recommend to rectify gaps in these services? | 10 |

Please turn over

QUESTION 27. Sociology of Games and Sport	Marks
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- | | |
|---|-----------|
| (a) What influence might the Sydney 2000 Olympics have on patterns of physical activity within the community? | 8 |
| (b) Both the negative and positive aspects of competition have helped to define the Australian sporting identity. | 12 |

Discuss this statement in relation to ONE of the following:

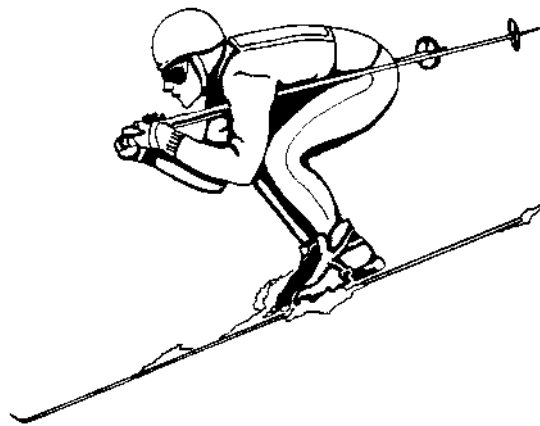
- children and competitive sport;
- aggression and violence in sport;
- drugs in sport.

QUESTION 28. Two Social Health Issues—Drug Use and HIV/AIDS

- | | |
|---|-----------|
| (a) Identify changes to work practices that have occurred in order to reduce the risk of HIV infection. | 4 |
| (b) Describe how community initiatives provide support to people with HIV/AIDS, and to their families and friends. In your answer, refer to TWO specific community initiatives. | 6 |
| (c) (i) Discuss the patterns of use of illegal drugs in Australia and their impact on the community. | 10 |
| (ii) How might governments assist the community to reduce the impact of illegal drugs? | |

QUESTION 29. Human Movement**Marks**Attempt *EITHER* Part A *OR* Part B.*EITHER***Part A. Biomechanics of Human Movement**

- (a) Explain the biomechanical principles that affect success in contact sports. **6**
- (b) Explain Newton's THREE laws in relation to a 100-metre swimming event. **8**
- (c) Describe the biomechanical principles that a down-hill skier employs to maximise speed. In your answer, refer to the diagram below. **6**



'The Biomechanics of Sports Techniques', JG Hay, 3rd edn, 1985, p181.
Reprinted courtesy Allyn & Bacon.

*OR***Part B. Applied Anatomy, Exercise Physiology, Principles of Training, Fitness Testing Protocols**

- (a) (i) For a person performing abduction of the shoulder, identify a: **5**
1. prime mover;
 2. synergist;
 3. stabiliser.
- (ii) For each muscle that you have identified in part (i), name the origin and insertion.
- (iii) Explain a specific exercise for strengthening the synergist identified in part (i).
- (b) Explain the physiological processes involved in muscle contraction. **10**
- (c) Describe TWO protocols used to test anaerobic power. What factors would you consider when choosing between these two protocols? **5**

Please turn over

QUESTION 30. The Art and Science of Coaching	Marks
<p>(a) You have been asked to evaluate the coaching program of a local sporting club. What guidelines would you use to determine if effective coaching is taking place? Answer in terms of:</p> <ul style="list-style-type: none">• qualities of the coaching staff;• methods of instruction;• structure of training sessions.	15
<p>(b) How would a coach use skilful observation to improve the performance of an athlete?</p>	5