



HIGHER SCHOOL CERTIFICATE EXAMINATION

1995

**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.

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.

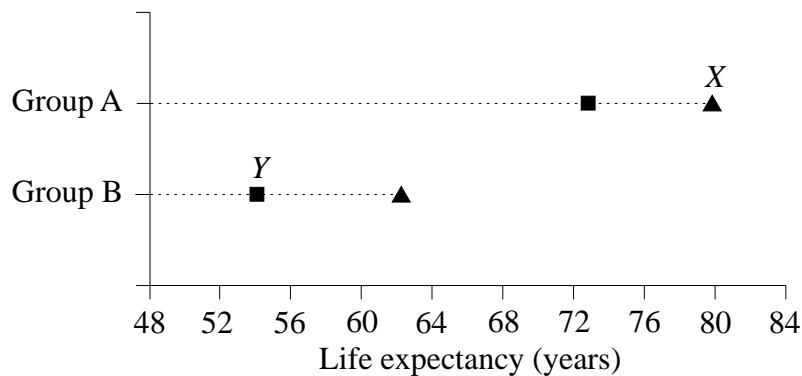
Mark your answers in pencil on the Answer Sheet provided.

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

1. In Australia, the three major modifiable risk factors for coronary heart disease (CHD) are
 - (A) smoking, raised blood lipids, and raised blood pressure.
 - (B) smoking, moderate alcohol consumption, and raised blood lipids.
 - (C) family history of CHD, obesity, and raised blood pressure.
 - (D) physical inactivity, stress, and obesity.

2. Alcohol consumption has been recognized as a major factor leading to motor vehicle accidents causing injury or death to males aged 18 to 25 years. The two other major factors are
 - (A) country driving and lack of driver experience.
 - (B) driver fatigue and excessive speed.
 - (C) overcrowding in vehicles and failure to use seat belts.
 - (D) heavy traffic and poorly maintained vehicles.

3. Study the figure below.



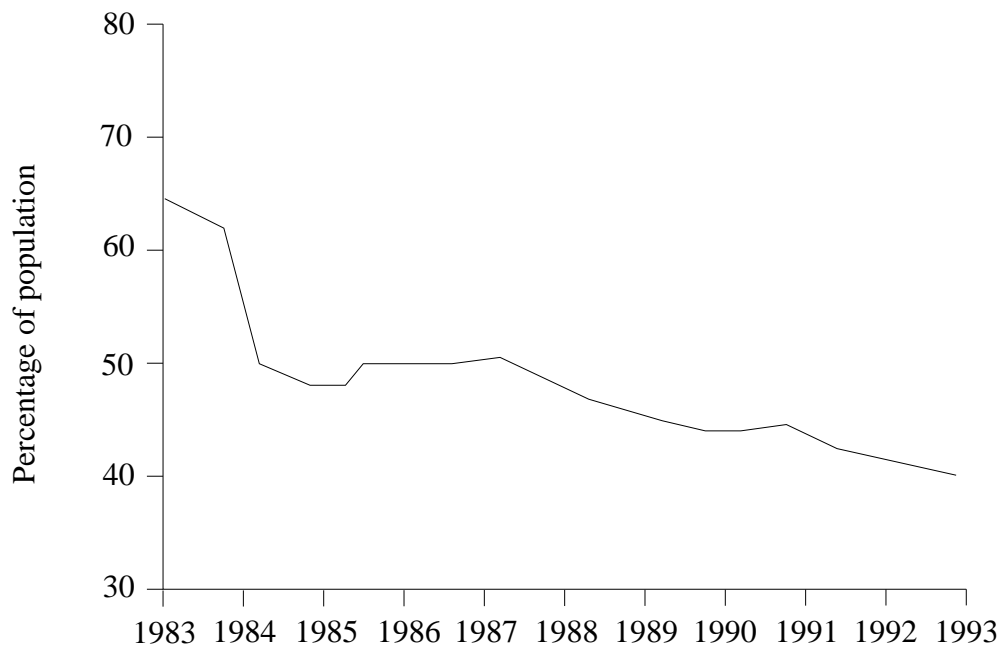
LIFE EXPECTANCY AT BIRTH FOR SELECTED GROUPS

What groups are represented by the letters X and Y on the above graph?

- (A) X = total male population of Australia; Y = total female population of Australia.
- (B) X = total female population of Australia; Y = Aboriginal females.
- (C) X = Aboriginal females; Y = Aboriginal males.
- (D) X = total female population of Australia; Y = Aboriginal males.

4. Health expenditure in Australia increased from 5.2 per cent of gross domestic product (GDP) in 1960 to 8.5 per cent of GDP in 1992–93. The greatest contribution to this increase came from
- (A) an increase in the Australian population.
 - (B) an aging population.
 - (C) increased expenditure on medical research.
 - (D) easier access to medical practitioners.
5. Hypertension, diet, smoking, and oral contraceptives are linked mostly to
- (A) breast cancer.
 - (B) stroke.
 - (C) diabetes.
 - (D) chronic lung disease.

6. Study the figure below.



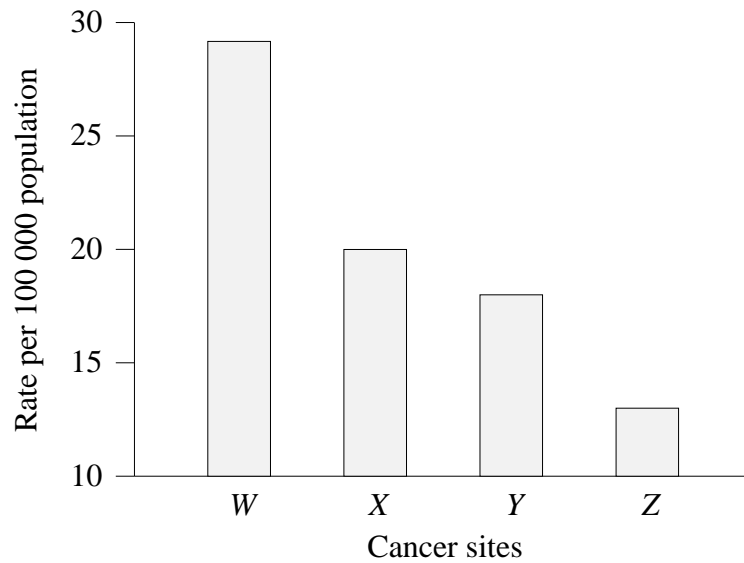
TREND IN HEALTH: AUSTRALIA 1983–93

Adapted from *Australia's Health*, 1994, Aust Institute for Health and Welfare, AGPS.

The trend represented in the graph might refer to

- (A) persons with private health insurance.
- (B) children diagnosed with asthma.
- (C) persons requiring hospitalization.
- (D) children participating in immunization programs.

7. Study the figure below.



DEATHS IN FEMALES DUE TO CANCER BY
MAIN BODY SITES, AUSTRALIA 1991

Adapted from *Women in Australia*,
Australian Bureau of Statistics.

Which of the following is the major risk-factor responsible for the cancer type marked *W* above?

- (A) Increased smoking in the 15–24 year age-group.
- (B) Low dietary-fibre intake.
- (C) First child born later in the mother's life.
- (D) Increased number of sexual partners.

8. A local health-promotion initiative targets the following:

- improved nutrition;
- increased physical activity;
- the provision of knowledge about local health and medical services.

This health-promotion initiative is likely to have the greatest impact on health status in a region where most people are

- (A) part-time seasonal employees in a rural setting.
- (B) predominantly young with a high level of education.
- (C) retired and mostly dependent on care.
- (D) of low socio-economic status.

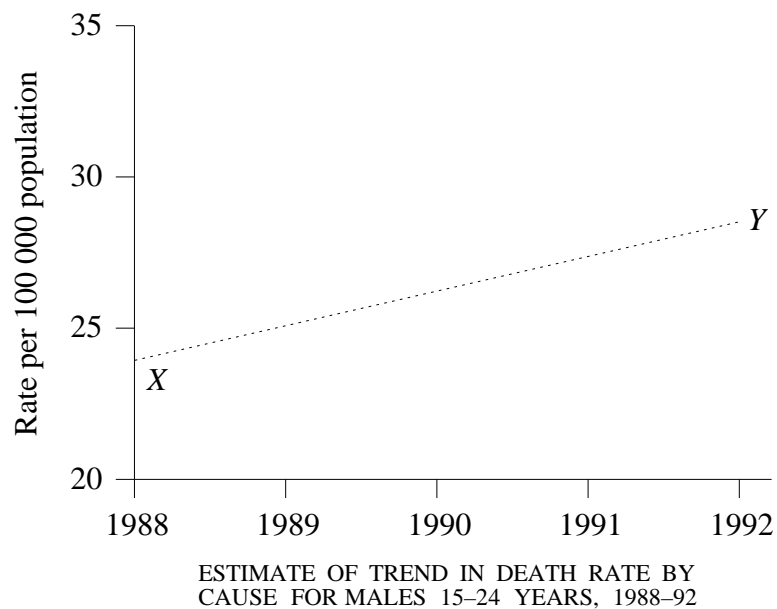
9. A 42-year-old man visits a doctor and has a blood sample analysed. He was given the following advice.

- Reduce consumption of alcohol, total kilojoules (Calories), and refined sugar.
- Decrease body fat.
- Increase physical activity and dietary fibre intake.

This advice would be consistent with a diagnosis of

- (A) coronary heart disease.
- (B) cancer of the colon.
- (C) diabetes mellitus.
- (D) hypertension.

10. Study the figure below.



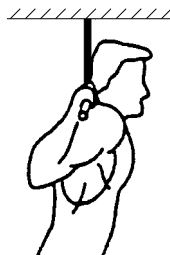
Adapted from *Australia's Health*, 1994, Aust Institute for Health and Welfare, AGPS.

From the figure above, which of the following best represents the line XY?

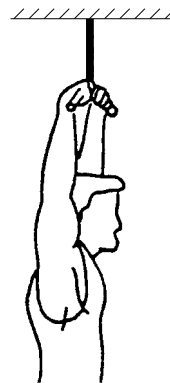
Deaths due to

- (A) motor vehicle accidents.
- (B) cancer.
- (C) injury from other causes.
- (D) suicide.

11. Adenosine triphosphate (ATP) is a molecule which
- (A) is broken down to produce glycogen during aerobic exercise.
 - (B) provides energy used for the breakdown of glycogen during aerobic exercise.
 - (C) is produced from glycogen during anaerobic exercise.
 - (D) is broken down to produce lactic acid during anaerobic exercise.
12. An elite middle-distance runner who is nearing the end of an 800-metre race will be experiencing a
- (A) high blood-lactate level and peripheral vasoconstriction.
 - (B) low blood-lactate level and peripheral vasodilation.
 - (C) low blood-lactate level and a rise in carbon-dioxide level in the blood.
 - (D) high blood-lactate level and a rise in heart-rate to maximum level.
13. During proprioceptive neuromuscular facilitation (PNF) stretching, which of the following occurs? An
- (A) isotonic contraction of a muscle group followed by an increased stretch.
 - (B) isometric contraction of a muscle group followed by an increased stretch.
 - (C) isotonic contraction of a muscle group producing movement to the limit of the joint's range of motion.
 - (D) isometric contraction of a muscle group which moves the joint through its full range.
14. Study the diagrams below.



POSITION A



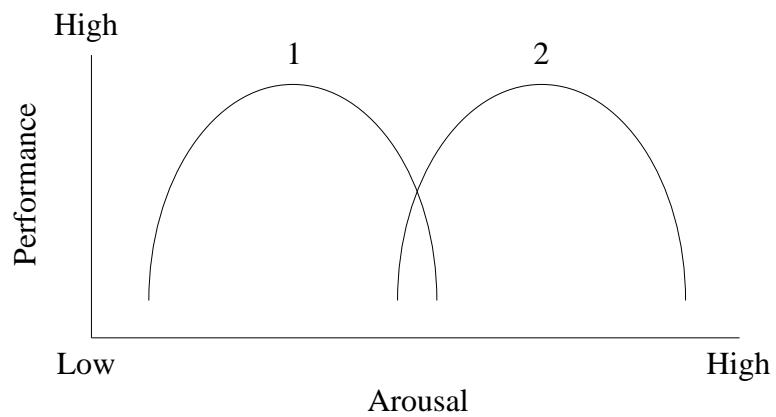
POSITION B

In lowering the body from position A to position B, the

- (A) biceps brachii muscle contracts eccentrically.
- (B) biceps brachii muscle contracts concentrically.
- (C) triceps brachii muscle contracts isometrically.
- (D) triceps brachii muscle contracts isokinetically.

- 15.** In general, a balanced diet is recommended for athletes. However, a change in dietary intake is most likely to be needed in the form of
- (A) calcium for female athletes.
 - (B) amino acids to increase muscle size for power athletes.
 - (C) carbohydrate foods for endurance athletes.
 - (D) iron for male triathletes.
- 16.** You have been asked to judge performance in a team sport. Which of the following tests will allow you to make an objective judgement?
- (A) Scores and individually developed criteria.
 - (B) Check-lists and reports from experts.
 - (C) Scores and check-lists.
 - (D) Individually developed criteria and statistics.
- 17.** Male athletes who use anabolic steroids may experience
- (A) testicular atrophy, an increase in muscular strength, and aggressive behaviour.
 - (B) testicular atrophy, loss of facial hair, and an increase in muscle mass.
 - (C) muscular atrophy, acne, and an increase in aggressive behaviour.
 - (D) muscular hypertrophy, acne, and increased body fat.
- 18.** Before an endurance event, an athlete consumes a sports drink that is high in sodium. This athlete will have an increased likelihood of
- (A) avoiding muscular cramp.
 - (B) constriction of blood vessels.
 - (C) greater blood flow to muscles.
 - (D) dehydration and heat stress.
- 19.** The body's immediate reaction to exposure to freezing temperature and high winds would be
- (A) vasoconstriction of the peripheral blood vessels.
 - (B) a decrease in heart-rate.
 - (C) a decrease in metabolic rate.
 - (D) a rapid lowering of core temperature.

20. Study the figure below.



AROUSAL-PERFORMANCE RELATIONSHIP FOR AN INDIVIDUAL

Compare the two arousal-performance curves above. The curve marked '2' represents a

- (A) better performance than curve 1.
- (B) poorer performance than curve 1.
- (C) performance of a less complex skill than curve 1.
- (D) performance of a more complex skill than curve 1.

EXAMINER'S USE ONLY

STUDENT NUMBER

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2 UNIT**

CENTRE NUMBER

SECTION II

Marks

(60 Marks)

Attempt ALL questions.
Each question is worth 15 marks.

QUESTION 21. Analysis and Management of Community Health

(a) Select ONE of the following sexually transmitted diseases. **4**

- Pelvic inflammatory disease (PID)
- Herpes
- Chlamydia
- Non-specific urethritis (NSU)

(i) Identify the cause of the disease.

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(ii) Identify the groups most at risk.

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(iii) Describe TWO management strategies appropriate for a person who has contracted the disease.

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QUESTION 21. (Continued)

Marks

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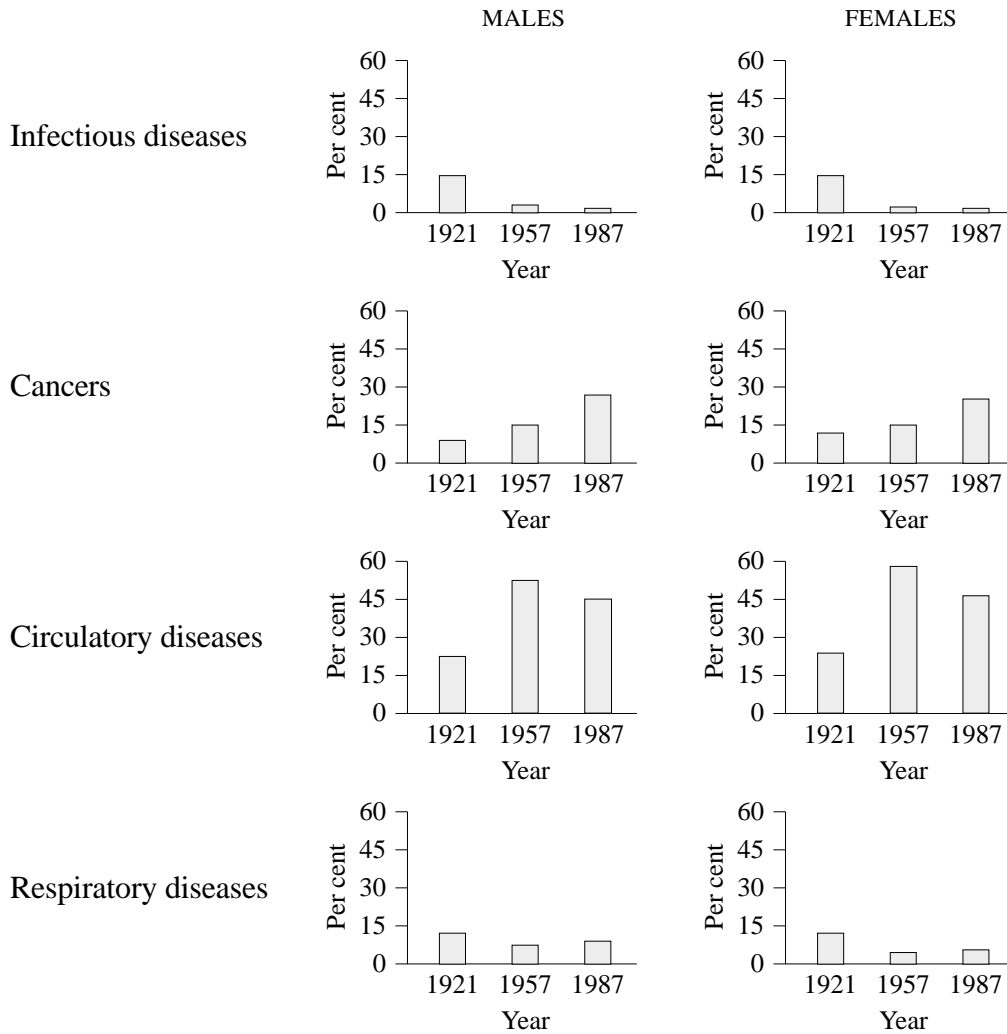
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(b) Study the diagram below.

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DISTRIBUTION OF MAJOR CAUSES OF DEATH: 1921, 1957, AND 1987

Adapted from *Australia's Health*, 1994, Aust Institute for Health and Welfare, AGPS.

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QUESTION 23. (Continued)

Marks

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QUESTION 24. (Continued)

Marks

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(c) Describe how mental rehearsal can be used to improve physical performance. **4**

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Question 24 continues on page 24

QUESTION 24. (Continued)

Marks

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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

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|-----|--|-----------|
| (a) | Describe how player safety in sport can be improved by: | 10 |
| | (i) sports administrators; | |
| | (ii) coaches; | |
| | (iii) players. | |
| (b) | Outline the symptoms and immediate management of neck and spinal injuries. | 5 |
| (c) | Describe the nature, treatment, and prevention of stress fracture. | 5 |

QUESTION 26. Community Health Issues

- | | | |
|-----|--|-----------|
| (a) | Choose from ONE of the following: | 10 |
| | <ul style="list-style-type: none"> • groups of non-English-speaking background; • people with disabilities. | |
| | <p>You are asked to determine the health needs of the group you have chosen. Describe the process that you would adopt to develop and administer a questionnaire to determine these needs.</p> | |
| (b) | (i) Compare the health status of Aboriginal Australians with that of non-Aboriginal Australians. | 10 |
| | (ii) Describe the factors that contribute to the differences identified. | |

QUESTION 27. Sociology of Games and Sport	Marks
(a) Discuss ways in which sport can be exploited for political purposes.	6
(b) As a member of the student body, you have been asked to address a school staff meeting to argue for the right to keep competitive sport in your school. Outline the positive aspects of competitive sport that could be argued during your presentation.	6
(c) Select TWO of the following groups and show how opportunities to participate in sport have developed to reflect social change.	8
<ul style="list-style-type: none"> • disabled athletes • female athletes • veteran athletes • professional athletes. 	

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

(a) Problems directly related to alcohol cost industry and the national economy in excess of one billion dollars each year. Identify and discuss the problems related to alcohol use that contribute to these costs.	8
(b) A person has been diagnosed as being HIV positive. What does this diagnosis mean and how will it affect this person's life?	6
(c) Discuss how societal attitudes and individual practices have been influenced by HIV/AIDS.	6

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

- (a) Describe the biomechanical factors that: **8**
- (i) determine a person's buoyancy;
 - (ii) influence a person's speed of movement through water.
- (b) Describe the biomechanical principles that are important for efficiency and safety when lifting a heavy object. **6**
- (c) Explain the term 'centrifugal force'. Describe how this force influences the effectiveness of the golf swing. **6**

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

- (a) (i) Compare the cardiac output of a trained person with that of an untrained person: **8**
- 1. at rest;
 - 2. during maximal exercise.
- (ii) What factors might contribute to the differences identified in part (i) above?
- (iii) Briefly describe the factors that determine the delivery of oxygen to muscle cells.
- (b) Describe the anatomical and physiological changes that occur in muscles as a result of following a program designed to increase muscular strength and size. **8**
- (c) For the quadriceps muscle group: **4**
- (i) list the muscles in this group;
 - (ii) name TWO joint actions for which this muscle group is responsible;
 - (iii) choose ONE of the muscles in this group and:
 - 1. name its origin(s) and insertion(s);
 - 2. state a movement that involves an isotonic concentric contraction of this muscle.

Please turn over

QUESTION 30. The Art and Science of Coaching	Marks
(a) Identify THREE coaching styles. For each style: (i) list its advantages and disadvantages; (ii) indicate a situation where it would be the most appropriate style.	6
(b) Feedback is important in all stages of skill development. Describe the ways in which feedback can be applied in coaching.	8
(c) Members of the team you coach are showing signs of over-confidence because of their continuing success. You want to refocus their attention on aspects of their performance other than winning. Describe the coaching strategies you could use to achieve this.	6