

BOARD OF STUDIES
NEW SOUTH WALES

HIGHER SCHOOL CERTIFICATE EXAMINATION

2000

COMPUTING STUDIES

2/3 UNIT (COMMON)

SECTION I—CORE

(40 Marks)

*Total time allowed for Sections I and II—Three hours
(Plus 5 minutes reading time)*

DIRECTIONS TO CANDIDATES

- No calculators are to be used.

Part A (20 marks)

- Attempt ALL questions.
- Write your Student Number and Centre Number on the Answer Sheet provided.
- Complete your answers in either blue or black pen on the Answer Sheet provided.

Part B (20 marks)

- Attempt BOTH questions.
- Write your Student Number and Centre Number in the spaces provided on the first page of each question.
- Answer the questions in the spaces provided in this paper.

- 1 The purpose of using tools, such as data flow diagrams and decision tables, in systems development is to
 - (A) specify the program structure.
 - (B) determine test data requirements.
 - (C) improve understanding of the existing system.
 - (D) keep users informed of system development progress.

- 2 What are the elements of a data flow diagram?
 - (A) Entity, process, data flow and data store
 - (B) Context, process, data flow and data store
 - (C) Entity, process, transaction flow and data store
 - (D) Data dictionary, process, data flow and data store

- 3 A systems analyst is investigating various ways to computerise a system. At what stage of the system development cycle would this investigation be carried out?
 - (A) Feasibility study stage
 - (B) Analysis stage
 - (C) Design stage
 - (D) Implementation and testing stage

- 4 Data dictionaries, data flow diagrams and decision trees are tools used in what stage of the system development cycle?
 - (A) Feasibility study stage
 - (B) Analysis stage
 - (C) Design stage
 - (D) Implementation and testing stage

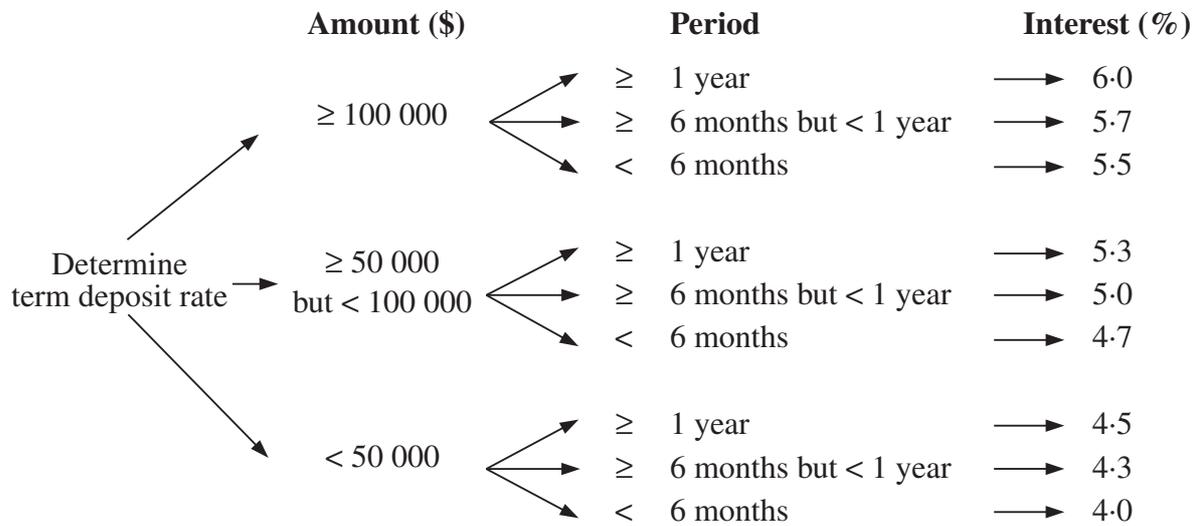
- 5** A particular business firm does not develop its own application software. It buys application packages from software vendors. At what stage of the system development cycle would the firm's analyst investigate which package best meets the needs of the business?
- (A) Requirements definition stage
 - (B) Feasibility study stage
 - (C) Analysis stage
 - (D) Design stage

USE THE INFORMATION BELOW TO ANSWER QUESTIONS 6, 7 AND 8

The Contrabank would like to expand its Internet banking facilities by allowing its non-business customers to do their banking over the Internet. The existing system has been investigated and the requirements of the new system determined.

- 6** The next logical stage to undertake would be the
- (A) analysis stage.
 - (B) design stage.
 - (C) implementation and testing stage.
 - (D) operation and evaluation stage.
- 7** The bank would like to start implementation of the improved Internet banking system on a small scale without any major change to the existing system.
- What approach to system conversion should be undertaken?
- (A) Direct conversion
 - (B) Low-level conversion
 - (C) Parallel conversion
 - (D) Pilot conversion

- 8 One of the features available to customers is for them to automatically transfer money into a term deposit account. During the development of the system, the following diagram was produced:



This diagram is an example of a

- (A) data flow diagram.
 (B) decision tree.
 (C) Gantt chart.
 (D) system flowchart.
- 9 What area of study is concerned with the impact of computer-based systems on users?
- (A) Ecology
 (B) Economics
 (C) Entomology
 (D) Ergonomics
- 10 Job application screening, employee function separation, and copy protection are all examples of
- (A) piracy protection.
 (B) licence protection.
 (C) data security.
 (D) virus security.

11 A telephone directory is available in electronic form with the names listed in alphabetical order. What would be the most effective method for the search program to use to locate a person's details?

- (A) A binary search
- (B) A linear search
- (C) A multiway search
- (D) A selection search

12 Study the following algorithm.

```
BEGIN
READ A
READ B
  WHILE A <> 2 AND B <> 2
    PRINT A * B
    READ A
    READ B
  ENDWHILE
END
```

From the input data

0, 1, 1, 2, 2, 3, 2, 2

the output produced will be

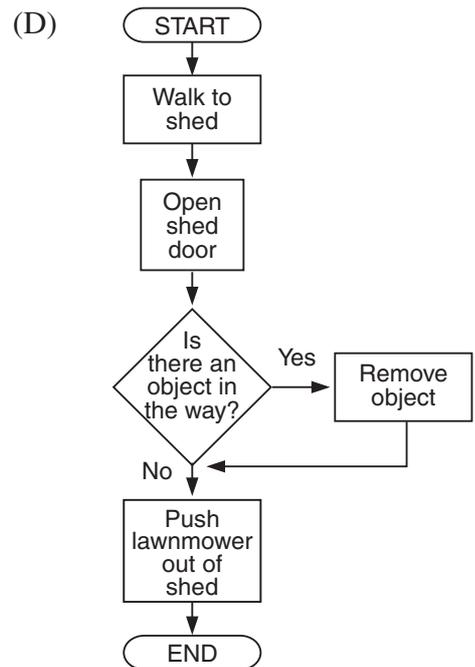
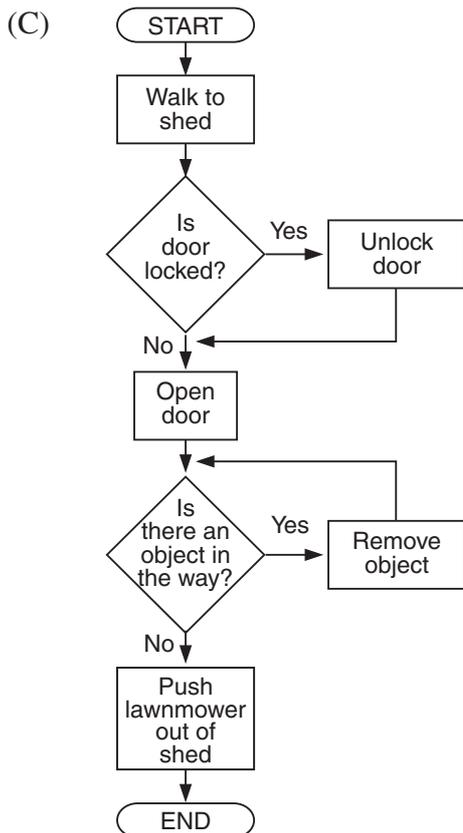
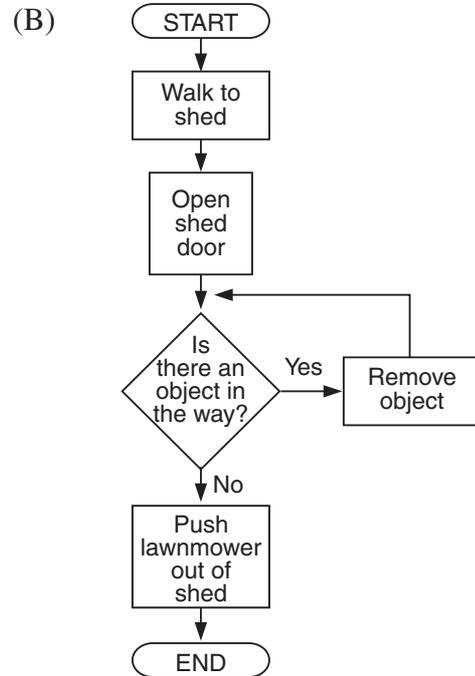
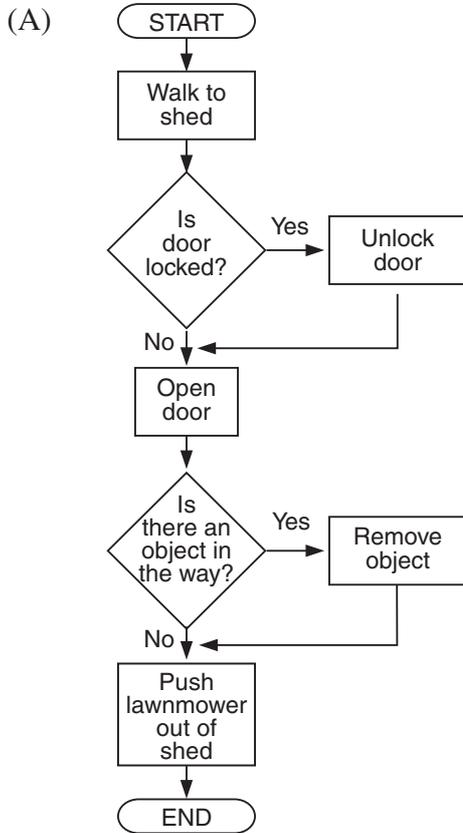
- (A) 0
- (B) 0, 2
- (C) 0, 2, 6
- (D) 0, 2, 6, 4

13 A computer program is to be developed to store the names of certain cartoon characters. What would be the most appropriate data structure to be used?

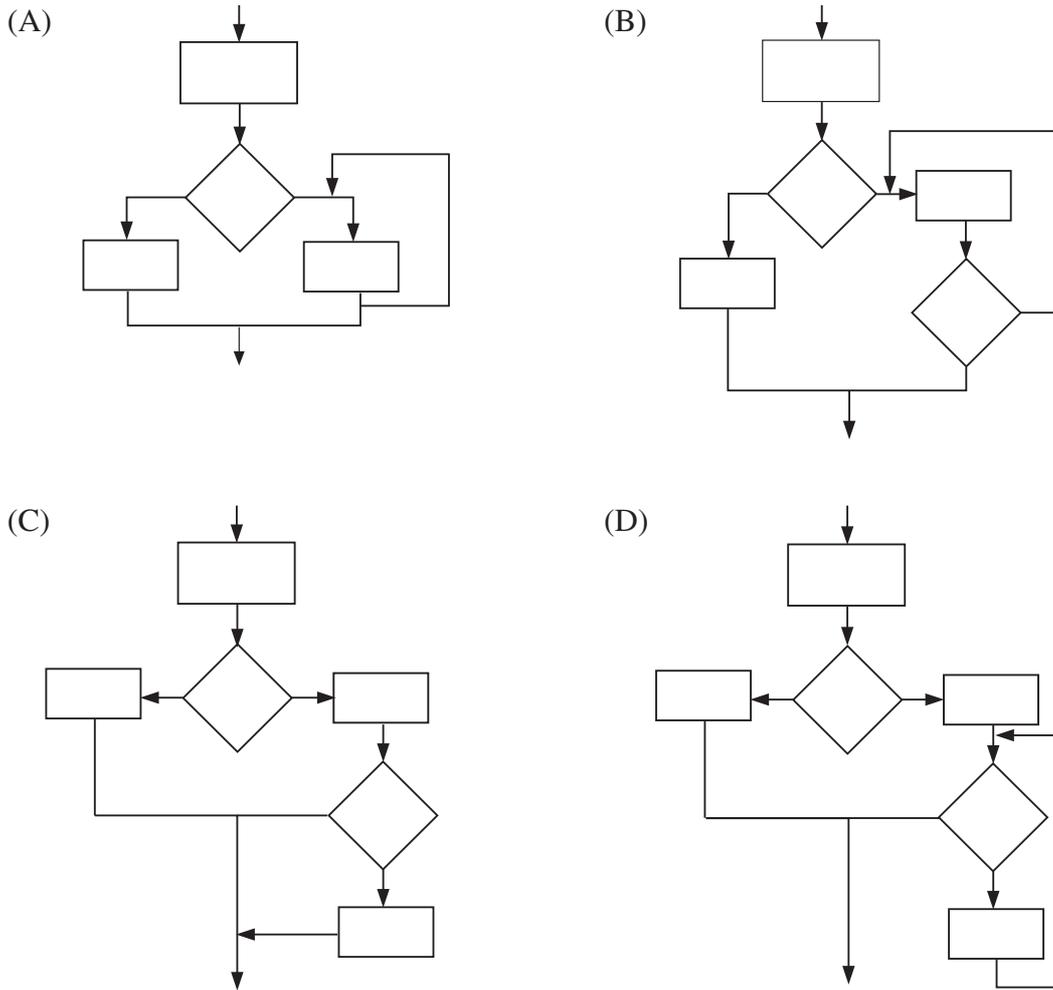
- (A) A list
- (B) A record
- (C) An array of characters
- (D) A one-dimensional array

- 14 A person wants to use a lawnmower. The person goes to a lockable shed, opens the shed door, removes each object, in turn, that may be in the way and pushes the lawnmower out of the shed.

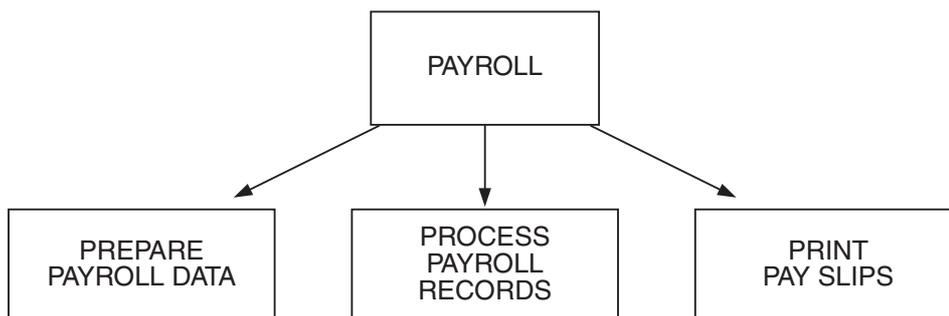
Which of the following algorithms best describes this task?



15 Which of the following programming structures has a pre-test repetition?



16 The following design is to be used to produce a payroll process algorithm.



The design approach used is

- (A) bottom-up.
- (B) functional.
- (C) structured.
- (D) top-down.

- 17** Which of the following best describes an array?
- (A) A group of elements holding data of different types
 - (B) A group of elements holding data of the same type
 - (C) A group of integers
 - (D) A list of numbers
- 18** An algorithm has to be developed for a school to generate a report, using records in a late students file. If there are no late students, the report should not be printed. What is the most appropriate control structure to accomplish this?
- (A) A pre-test loop
 - (B) A post-test loop
 - (C) A binary selection
 - (D) A multi-way selection
- 19** Flowcharts and pseudocode are examples of
- (A) control structures.
 - (B) top-down designs.
 - (C) program design tools.
 - (D) structural designs.
- 20** A sorting technique that takes each element in an unsorted list and puts it in the correct position in a sorted list is
- (A) a bubble sort.
 - (B) an insertion sort.
 - (C) a selection sort.
 - (D) a linear sort.

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MARKER'S USE ONLY

STUDENT NUMBER

**2000
HIGHER SCHOOL CERTIFICATE EXAMINATION
COMPUTING STUDIES
2/3 UNIT (COMMON)—SECTION I, PART B**

CENTRE NUMBER

PART B

Marks

(20 Marks)

Attempt BOTH questions.

Answer the questions in the spaces provided in this paper.

QUESTION 21 Computer-based Systems (10 marks)

- (a) (i) Systems can be tested using actual data, or by the use of specially made-up test data. Give ONE disadvantage of each method in discovering errors in the system. **5**

Actual data disadvantage

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Made-up test data disadvantage

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Question 21 continues on page 14

QUESTION 21 (Continued)

Marks

- (ii) As part of a feasibility study, the project analyst will look at a number of possible ways of solving the problem. If all alternatives have the same cost, name and describe TWO other criteria that could be used to supply reasons for rejecting all but the recommended solution.

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- (iii) Timothy and Therese have commenced a video store business. They have asked you to recommend the hardware and software they should purchase for the business.

1 Discuss what you would have to do before you could make a recommendation.

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2 As no suitable software is available for purchase, they have asked you to design a system for them. What actions are required for this?

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QUESTION 21 (Continued)

Marks

(b) A new sales order system is to meet the following functional requirements: 5

- sales order clerks enter customer orders received by telephone;
- a customer must have an account in the customer file, and the product ordered must be in the product file;
- after the order has been entered, it is stored in the orders file. The order is then printed remotely in the warehouse for selection, packing, and dispatch of the products ordered;
- when the order is completed and sent, the customer record is updated with the cost of the goods dispatched and the resulting invoice is printed and sent to the customer;
- the quantity of each product dispatched is subtracted from the stock quantity held in the product file.

(i) The stages of development of the new system require good management if they are to be finished on time. Name and describe a tool that can be used to ensure this.

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(ii) In the data flow diagrams used to define the processes in the new system, data stores are each given a name which only briefly describes the content.

1 Where are the full details of each element in the data stores documented?

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2 Describe the features which need to be documented for each data element.

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QUESTION 21 (Continued)

Marks

- (iii) The system has a module designed to store, for analysis by management, the name of the sales clerk who entered the order, the number of item lines in the order and the number of orders entered each day by each clerk. Discuss the human and social implications of this procedure.

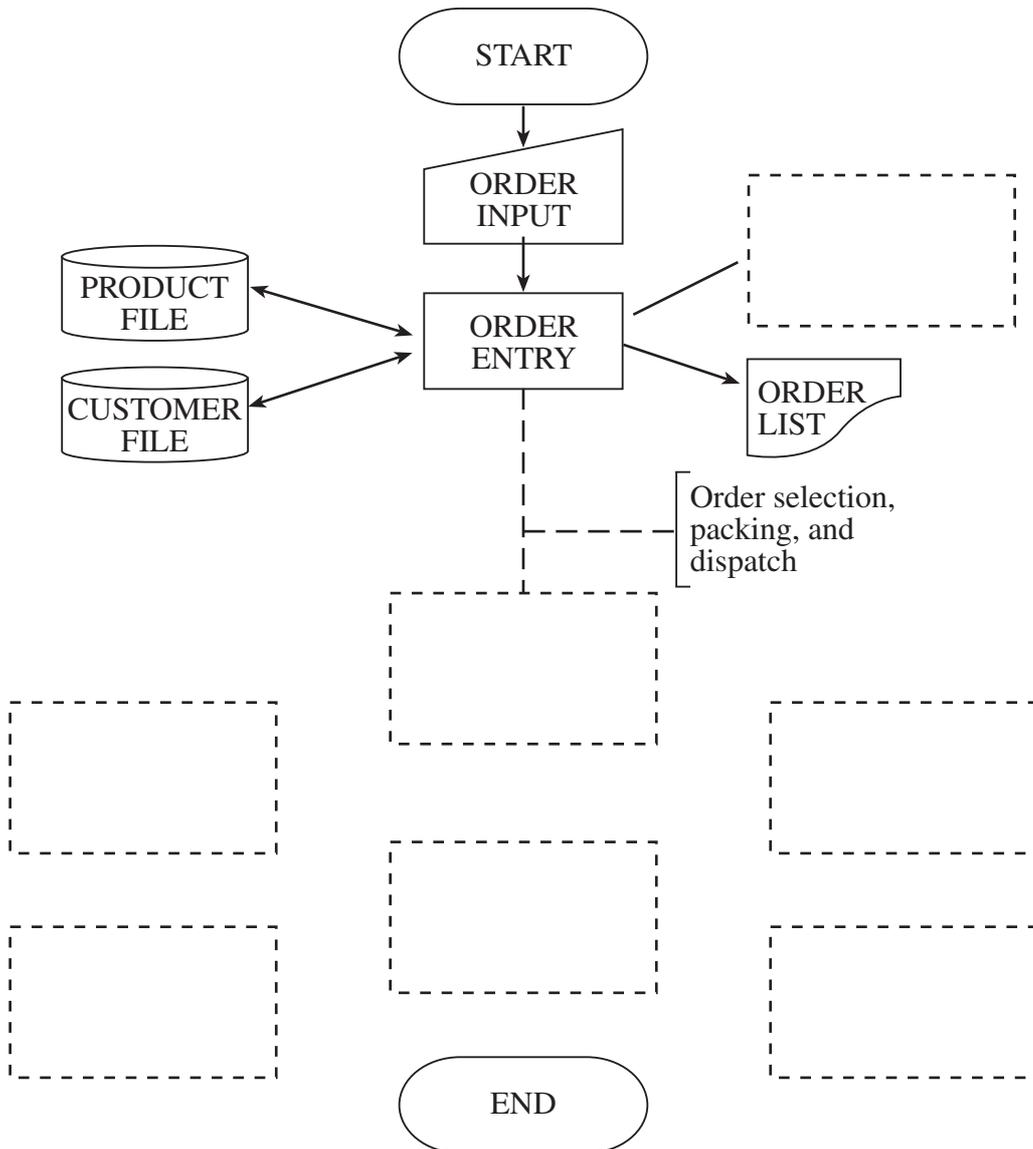
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- (iv) Complete the system flowchart for the new sales order system. Put a descriptive name and the correct symbol in each dotted area, and join the dotted areas with arrowed lines.



MARKER'S USE ONLY

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2000

HIGHER SCHOOL CERTIFICATE EXAMINATION
COMPUTING STUDIES

2/3 UNIT (COMMON)—SECTION I, PART B

CENTRE NUMBER

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QUESTION 22 Algorithm Design (10 marks)

Marks

- (a) A security alarm system has been installed at the entrance of a building. The system will only allow entry to people who have keyed in the correct four digit number, using a key pad, within 10 seconds. After entering the number, the user presses an 'ok' button to allow the number to be checked. Only one attempt at entering the four digit number is allowed. 6

A siren will sound if:

- the number entered is incorrect
- the 10 second time period, allowed for keying in all four digits and pressing the 'ok' button, has elapsed.

- (i) Design a minimum set of tests, for the given description, by completing the table.

<i>Time</i>	<i>Number</i>	<i>Expected result</i>
< 10 secs	correct	entry 'ok'

Question 22 continues on page 18

QUESTION 22 (Continued)

Marks

- (iii) The original algorithm for the security alarm system does not allow the user to re-enter the code number if they have accidentally pressed an incorrect key. Rewrite the algorithm, using EITHER a flowchart OR pseudocode, so that
- a 'cancel key' can be used to allow re-entry of the code number, and reset of the timer, within 10 seconds;
 - up to three entry tries are allowed.

Question 22 continues on page 20

QUESTION 22 (Continued)

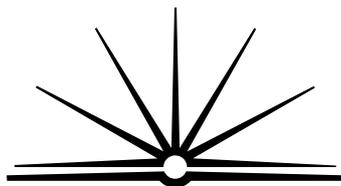
Marks

- (b) A sports car has an automated braking system. This braking system automatically corrects the braking pressure when the car is travelling around corners dangerously. Braking pressure will be automatically applied, based on conditions shown in the table. 4

<i>Turning angle</i>	<i>Speed dry conditions (km/h)</i>	<i>Speed wet conditions (km/h)</i>
>180°	over 10	over 5
>90°	over 35	over 20
>45°	over 50	over 30

Use EITHER a flowchart OR pseudocode to write an algorithm that determines when the braking pressure should be automatically applied as specified.

End of Section I



B O A R D O F S T U D I E S
NEW SOUTH WALES

HIGHER SCHOOL CERTIFICATE EXAMINATION

2000

COMPUTING STUDIES

2/3 UNIT (COMMON)

SECTION II—OPTIONS

(60 Marks)

*Total time allowed for Sections I and II—Three hours
(Plus 5 minutes reading time)*

DIRECTIONS TO CANDIDATES

- Attempt **THREE** questions.
- Answer each question in a **SEPARATE** Writing Booklet.
- You may ask for extra Writing Booklets if you need them.

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QUESTION 23 Applied Artificial Intelligence and Expert Systems
(20 marks)

Marks

Use a SEPARATE Writing Booklet.

- (a) (i) Describe the parts of an expert system shell. **4**
- (ii) What is the main difference between a knowledge base and a database?
- (iii) Describe the essential difference between a knowledge engineer and an expert.
- (iv) What major branch of Artificial Intelligence is most suitable to identify minerals in a rock sample? Justify your answer.
- (b) Manipulation, reading, vision, and listening are human abilities that scientists have attempted to imitate using computers. **6**

Select TWO human abilities and

- (i) describe how each human ability you have chosen has been developed into a computer solution;
- (ii) discuss what problem(s) were overcome to implement the computer system from a laboratory curiosity to an everyday technology;
- (iii) describe a scenario where the computer system offers a more appropriate solution than was previously used or possible.

Question 23 continues on page 24

QUESTION 23 (Continued)

Marks

- (c) An expert has listed a set of rules that will assist the staff of a computer help-desk in their troubleshooting of hardware and software problems. The table below is part of the knowledge base included in the expert system.

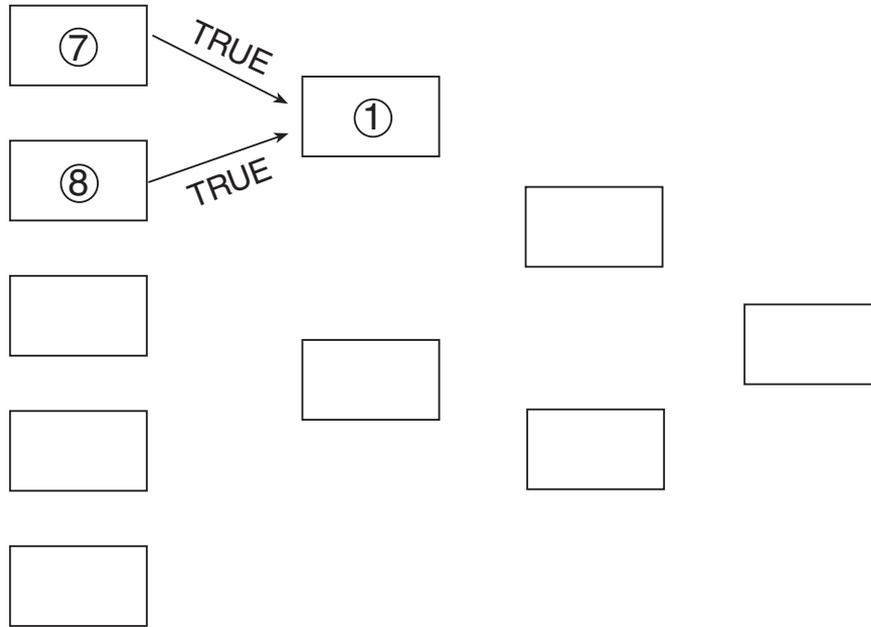
10

①	COMPUTER ON	IF	Computer power cable connected AND computer switched on
②	MONITOR ON	IF	Monitor power cable connected AND monitor switched on
③	NO DISPLAY	IF	NOT monitor on
④	NO DISPLAY	IF	Monitor on AND NOT computer on
⑤	NO DISPLAY	IF	Blank screen saver on AND computer on AND monitor on
⑥	BLANK SCREEN SAVER ON	IF	Time with no activity > 5 minutes
⑦	COMPUTER POWER CABLE CONNECTED	IF	Computer cable plugged into active power outlet
⑧	COMPUTER SWITCHED ON	IF	Computer switched to on position
⑨	MONITOR POWER CABLE CONNECTED	IF	Monitor power cable plugged into active power outlet
⑩	MONITOR SWITCHED ON	IF	Monitor switched to on position

QUESTION 23 (Continued)

Marks

- (i) Copy and complete the following diagram to show how each of the rules are linked together. Place rule numbers in each of the relevant boxes and join them with arrows, labelled TRUE or FALSE, to show the link between the rules.



- (ii) The help-desk expert system uses backward chaining, to ask questions about conditions to which the user gives a true (yes) or false (no) answer. A caller phones to say that their monitor has not displayed anything for the last 10 minutes. Assuming the expert system holds the rules above, write the list of questions that would be asked so a possible cause can be determined.
- (iii) If the answers to all the questions are true, what is the most probable cause of the problem?

Question 23 continues on page 26

QUESTION 23 (Continued)

Marks

- (iv) A computer user found that every time he used a particular program, the monitor screen had no display and the keyboard stopped working.

Write extra rule(s) that will help define the keyboard problem.

- (v) Given the following rules:

- ① IF A AND B THEN C
② IF A AND D THEN E
③ IF C AND F THEN G

which is the most likely conclusion if the following data list is also given? Justify your answer.

<i>Data list</i>
A
B
D
F

QUESTION 24 Computer Communications (20 marks)**Marks**

Use a SEPARATE Writing Booklet.

- (a) (i) Free bulletin boards were once a popular means of distributing information, but these days they have been largely replaced by the World Wide Web. Give TWO reasons why this has happened. **7**

- (ii) Three methods of transferring data to another person are:

- using a floppy disk;
- using a modem;
- using a LAN.

Assume all THREE methods are available to you. For EACH method, give a clear example, demonstrating the circumstances under which it would be the method chosen.

- (iii) When two computers transmit data on a LAN at the same time, the data is scrambled.

- 1 Contrast the approach to this problem taken by the token ring protocol, with the approach taken by a protocol such as ethernet.
- 2 Give an example of where the ethernet protocol would perform better than the token ring protocol.

- (iv) Students have connected two personal computers together using a serial connection. They were unable to establish communication and transfer files between the two computers.

Name TWO parameter/protocol settings that would need to be checked to determine why the computers were not able to communicate.

Question 24 continues on page 28

QUESTION 24 (Continued)

Marks

- (b) (i) Name EACH of the major network topologies. State ONE advantage and ONE disadvantage of each topology. **6**
- (ii) X-modem and Z-modem are file transfer protocols where the sender transmits packets of data to the receiver and the receiver sends acknowledgments and negative acknowledgments to the sender.
- 1 How does X-modem use acknowledgments and negative acknowledgments?
 - 2 State ONE advantage of the way Z-modem uses acknowledgments and negative acknowledgments.
 - 3 Why does Z-modem require a full duplex connection?
- (c) (i) Outline a situation where a leased line would be the preferred means of data communication compared with a dial-up line. **7**
- State TWO advantages of using a leased line in this situation.
- (ii) A company is experiencing problems in transmitting data across its WAN. These problems have been identified as being in the areas of security and signal strength.
- 1 What are the consequences of problems in EACH of these areas for the company?
 - 2 Suggest ways in which the problems can be overcome in EACH area.
- (iii) Checksums and parity checks are used to detect errors when transmitting computer files.
- 1 Explain what a checksum is.
 - 2 Why is a checksum more accurate than a parity check?
 - 3 What errors may not be detected by a checksum?

QUESTION 25 Computer-controlled Systems (20 marks)**Marks**

Use a SEPARATE Writing Booklet.

- (a) (i) What is meant by the term *damping*? 5
- (ii) What effect does *over-damping* have on the performance of a control system?
- (iii) Discuss ONE of the factors in a control system and its environment that requires that controlling action be *damped*.
- (iv) How can *damping* be achieved in a control system?
- (v) What is meant by the term *discrete control system*?
- (b) A remote section of a highway, subject to icing and fogs, has a large number of accidents. It normally has a high speed limit. Traffic authorities feel that if the speed limit were to be automatically lowered, according to the conditions and amount of traffic prevailing at any time, the accident rate would drop. 7
- A possible solution could be a computer-controlled system that operates speed limit displays. It would need to have the following inputs:
- amount of fog over the highway, day and night;
 - whether ice had formed on the road surface;
 - number of vehicles, in both directions, on the section.
- (i) Name a sensor for each of the inputs, and describe how it would supply suitable data to the control system.
- (ii) Discuss ONE societal factor influencing the need for such a control system.
- (iii) State whether this system operates as an open or closed loop. Justify your answer.
- (iv) Describe how the input data could be used by the control system to arrive at a suitable speed limit to display.

Question 25 continues on page 30

QUESTION 25 (Continued)

Marks

- (c) The design and location of a building is such that the longest wall, which is composed of glass panelling, has the sun shining on it for most of the day. The architects have decided to try to reduce air-conditioning and power load by the use of controlled external vertical metal louvres. These would reduce glare and heat but increase lighting needs because of the shading. 8

The following conditions have to be met by the building environmental control system.

- *Air-conditioning*—Airflow is to be increased and outlet temperature decreased in floor areas nearest the glass-panelled wall, to counteract the extra heat as the sun shines fully on it in the afternoon.
- *Louvres*—To close gradually during the day to prevent the sun shining directly on the glass panelling.
- *Lighting*—Total amount of light to be kept constant in floor sections nearest the glass-panelled wall. Least amount of artificial light in the morning when louvres fully open; greatest amount in late afternoon when louvres nearly fully closed. Total artificial light at night.

- (i) Define each subsystem using a block diagram.
- (ii) Write the algorithm for the control of the lighting subsystem.
- (iii) What is the interaction between subsystems? Give a reason for your answer.
- (iv) The air-conditioning subsystem could have the additional facility of an automatic summer/winter cycle.
 - 1 Name and describe TWO sensors that you would use to supply input data for the facility.
 - 2 What would be the best location for these sensors? Justify your answer.

QUESTION 26 Computing Technologies (20 marks)**Marks**

Use a SEPARATE Writing Booklet.

- (a) (i) Give ONE reason why modern computing is based on the binary number system. **10**
- (ii) Give TWO reasons why coding methods such as BCD, EBCDIC and ASCII need to be created for use in computer systems, rather than mathematically converting data into binary.
- (iii) Perform the conversions specified below. If it is not possible, give a brief explanation as to why it cannot be done.
- 1 Convert hexadecimal 429 to binary.
 - 2 Convert octal 128 to binary.
 - 3 Convert octal 123 to hexadecimal.
- (iv) 1 How is the EBCDIC coding method derived from the BCD coding method?
- 2 How does it differ from the BCD coding method?
- (v) Represent decimal 23 by the EBCDIC coding method.
- (vi) Assuming that an eight-bit one's complement system is used, find the decimal equivalent of the number 00001100.
- (vii) Assuming that an eight-bit two's complement system is used, find the decimal equivalent of the number 11111000.
- (viii) Perform $100111_2 \div 101_2$, using shift and subtract. Show all working in binary.
- (ix) 'Using the same number of bits, more numbers can be represented using the two's complement system than the one's complement and the sign and modulus system.'

Discuss this statement with the aid of a three-bit system.

Question 26 continues on page 32

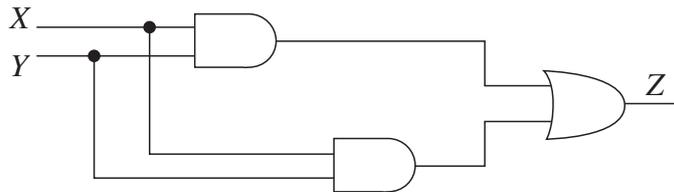
Answer EITHER part (b)—Theory and Construction of Integrated Circuits
OR part (c)—Optical Technologies

EITHER

(b) Theory and Construction of Integrated Circuits

10

(i) Study this circuit.



- 1 Draw a truth table for this circuit.
 - 2 Draw a simpler circuit to achieve the same result using the least number of logic gates.
 - 3 By adding one or more logic gates, modify the original circuit so that the final output Z is always true.
- (ii)
- 1 Under what condition does a flip-flop have a *disallowed* state?
 - 2 Describe how the state of the flip-flop will be determined after this disallowed state.
- (iii)
- 1 Describe the inputs and outputs of a half-adder.
 - 2 Consider a half-adder as a black box. Copy and complete the diagram below to show how two half-adders may be combined to form a full adder.



- (iv)
- 1 Describe the role of *masks* and how they are prepared in the manufacture of integrated circuits.
 - 2 Cleanliness is essential in the manufacture of integrated circuits. List THREE special precautions that may be carried out to ensure the cleanliness of the manufacturing environment.

OR

QUESTION 26 (Continued)

Marks

(c) **Optical Technologies****10**

- (i) What is a *laser*?
- (ii) Give TWO reasons why light emitted by a laser is more suited for use in optical technology than ordinary light.
- (iii) Describe the properties of optical fibre that lead to its use in data transmission.
- (iv) Despite optical fibre's increasing popularity, metallic conductors are still used extensively. Give THREE reasons for this.
- (v) Describe how data are stored on a compact disc.
- (vi) Describe the technology that is used in magneto-optical storage devices.
- (vii) Compare and contrast the capabilities of CD-ROM for data storage with magneto-optical disks, in terms of capacity, transfer rate, portability and rewriting ability.

Please turn over

QUESTION 27 Database Design (20 marks)**Marks**

Use a SEPARATE Writing Booklet.

Use the following database file to answer part (a), part (b) and part (c).

The file shows some records in a database an ecologist is using to collect and record information about the flora and fauna of a site.

#	Date (dd/mm/yy)	Location on grid	Time (24 h)	Temperature (°C)	Humidity (%)	Type of plant and number	Type of animal and number
1	11/01/99	C13	0630	9	69	P.1 0 P.2 5 P.3 8	A.1 0 A.2 2 A.3 16
2	11/01/99	C13	1030	11	55	P.1 0 P.2 5 P.3 8	A.1 3 A.2 2 A.3 5
3	11/01/99	C13	1430	17	50	P.1 0 P.2 5 P.3 8	A.1 4 A.2 2 A.3 5
4	11/01/99	C13	2130	10	54	P.1 0 P.2 5 P.3 8	A.1 0 A.2 2 A.3 16
55	21/07/99	C13	0630	0	70	P.1 0 P.2 5 P.3 8	A.1 0 A.2 2 A.3 0
56	21/07/99	C13	1030	3	50	P.1 0 P.2 5 P.3 8	A.1 2 A.2 2 A.3 5
57	21/07/99	C13	1430	7	59	P.1 0 P.2 5 P.3 8	A.1 3 A.2 2 A.3 5
58	21/07/99	C13	2130	4	68	P.1 0 P.2 5 P.3 8	A.1 0 A.2 2 A.3 0

QUESTION 27 (Continued)

Marks

- (a) (i) Create a data dictionary for this section of the database. **6**
- (ii) What is *data redundancy*? Is there redundant data in this database? Justify your answer.
- (iii) What are TWO shortcomings of this database when you try to query it?
- (iv) Give an example of how human factors may have affected the accuracy of this data.
- (b) (i) Currently, what field contains the primary key for this database? **6**
- (ii) A primary key can be composed of one or more fields.
- 1 What combination of fields could be used to create a primary key?
 - 2 Justify your answer.
 - 3 Using EITHER pseudocode OR a flowchart, design an algorithm to create a unique primary key based on the combination of fields identified in part b (ii) 1.
- (c) (i) Describe THREE issues about this database that would need to be addressed by the database administrator. **8**
- (ii) Do you think this database should be private or public? Give reasons for your answer.
- (iii) If this data was reorganised into a relational database format, a series of files would be created. How would you do this? Indicate the name of each file and the fields you would include in it.

QUESTION 28 Graphical Techniques (20 marks)**Marks**

Use a SEPARATE Writing Booklet.

- (a) (i) Describe how colour and shading are represented within the computer. **6**
- (ii) 1 How many bits per pixel are required to show 32 colours or shades?
2 If you wanted to show 6 colours how many bits per pixel would be required?
- (iii) What is *non-reproducible blue*?
- (iv) What is the purpose of the *colour register*?
- (v) Explain the difference between the concepts of *colour value* and *colour depth*.
- (b) (i) Animation is really an illusion of motion. Explain how this illusion is created. **8**
- (ii) Why would you use each of the following techniques on a static bit-mapped image?
- Anti-aliasing
 - Dithering
- (iii) 1 What is *interlacing*?
2 Explain why most computer display screens are non-interlaced.
- (iv) What is the term used to refer to the numbering system that identifies individual frames in a video sequence?
- (v) List TWO actions that should be part of a preventative maintenance program for an ink-jet printer.
- (vi) For EACH of the following techniques, give ONE example of where it would be used in computer graphics.
- 1 Wire frame
 - 2 Bezier curve

QUESTION 28 (Continued)

Marks

- (c) (i) Describe the technology used to generate graphics images in video games. **6**
- (ii) Changes in film-making have occurred because of advances in the technology available to generate computer graphics. Give TWO examples of advances in technology in this area.
- (iii) For each area, simulation and advertising, give ONE example where the use of graphics technology has benefited individuals or the community, and explain how it has been of benefit.

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QUESTION 29 Multimedia (20 marks)**Marks**

Use a SEPARATE Writing Booklet.

- (a) (i) Explain the differences between *hypertext* and *hypermedia*. **5**
- (ii) Describe the *cross-fade* process.
- (iii) What is another name for *cel buffer*?
- (iv) Give an example of *insert editing*.
- (b) (i) Inclusion of animations in a multimedia production often places heavy demands on processing and memory capabilities. What are TWO actions that could be taken to reduce this demand? (Assume no change in the physical components of the computer system being used.) **5**
- (ii) Editing of a video clip for inclusion within a multimedia presentation usually takes place before compression. Give TWO examples of editing activities that might occur at this time.
- (iii) What are TWO disadvantages of using a CD-ROM to store a completed multimedia presentation?
- (iv) Explain why copyright is an important issue for creators of multimedia presentations.
- (v) 1 What are TWO factors that must be taken into account when designing multimedia for education?
- 2 Explain how a multimedia presentation designed for education would differ from one designed for entertainment.

QUESTION 29 (Continued)

Marks

- (c) The local shopping centre has decided to create a multimedia presentation to be displayed automatically on video screens throughout the centre. The presentation will highlight the features of the centre and any special offers available from individual shops. **10**
- (i) Why would the use of hypertext not be appropriate in this presentation?
 - (ii) Would static graphics images or animations be more appropriate? Why?
 - (iii) Give an example of wavetable sound data that could be included.
 - (iv) Give an example of MIDI sound data that could be included.
 - (v) In designing the presentation, which storyboard layout would be most appropriate, and why?
 - (vi) Screen design and the quality of media components are two factors that will affect the quality of the final presentation. Outline the issues that are important in each of these areas for this presentation.
 - (vii) What would be the best way to store the completed presentation? Why?

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