



NSW Education Standards Authority

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Centre Number

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Student Number

2023 HIGHER SCHOOL CERTIFICATE EXAMINATION

Information and Digital Technology

General Instructions

- Reading time – 5 minutes
- Working time – 2 hours
- Write using black pen
- Calculators approved by NESA may be used
- Write your Centre Number and Student Number at the top of this page and pages 9, 11 and 13

Total marks: 80

Section I – 15 marks (pages 2–7)

- Attempt Questions 1–15
- Allow about 20 minutes for this section

Section II – 35 marks (pages 9–14)

- Attempt Questions 16–21
- Allow about 50 minutes for this section

Section III – 15 marks (page 15)

- Attempt Question 22
- Allow about 25 minutes for this section

Section IV – 15 marks (page 16)

- Attempt Question 23
- Allow about 25 minutes for this section

Section I

15 marks

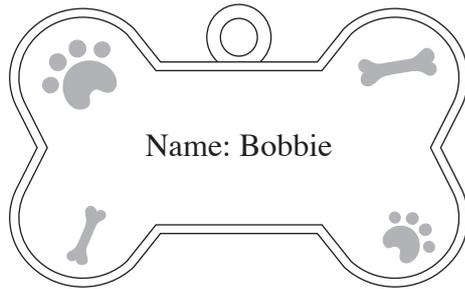
Attempt Questions 1–15

Allow about 20 minutes for this section

Use the multiple-choice answer sheet for Questions 1–15.

1 Which of the following contains personally identifiable information (PII)?

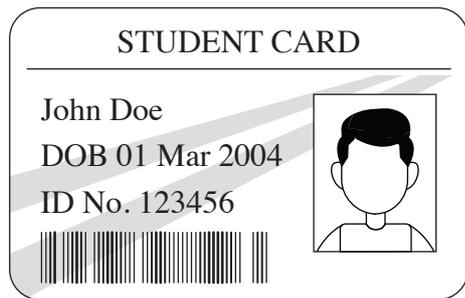
A.



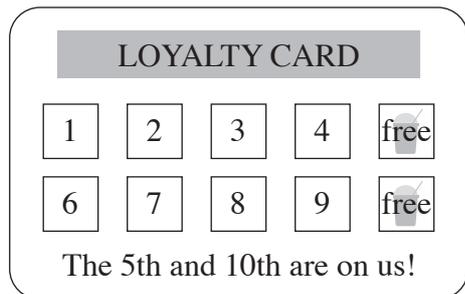
B.



C.



D.



- 2 What colour safety sign indicates a mandatory action?
- A. Blue
 - B. Green
 - C. Red
 - D. Yellow
- 3 The primary functions of the Office of the Australian Information Commissioner (OAIC) are associated with
- A. personal information, workplace data and equal opportunity.
 - B. government-held information, privacy and anti-discrimination.
 - C. workplace information, anti-discrimination and equal opportunity.
 - D. privacy, freedom of information and government information policy.
- 4 A computer program is to be developed for a department store to organise shifts for its employees. Using the program, each employee will choose a day (eg Saturday) and a shift (either morning or afternoon) that they are available.

Which combination of screen elements would be best for capturing the chosen day and shift?

	<i>Day</i>	<i>Shift</i>
A.	Drop-down list	Radio button
B.	Drop-down list	Check boxes
C.	Text box	Radio button
D.	Text box	Check boxes

5 An ICT department wants to evaluate the quality of its service. It wants to get feedback from a large number of users and be able to analyse the data within a short time frame.

Which of the following would be the best method to obtain this feedback?

- A. Interviews
- B. Focus groups
- C. Questionnaire
- D. Informal discussions

6 Which of the following best reflects a questioning mindset?

- A. Delegating project routines
- B. Following the code of conduct
- C. Analysing errors in workplace practices
- D. Implementing organisational procedures

7 A computer program is to be developed for a sports club to collect the phone number and membership status of its members.

- Phone number (eg 0915 675 245)
- Membership renewed (Yes/No)

Which row of the table correctly identifies the most suitable data types for Phone number and Membership renewed?

	<i>Phone number</i>	<i>Membership renewed</i>
A.	Integer	Real
B.	Integer	Boolean
C.	Text	Real
D.	Text	Boolean

8 Consider the following code fragment.

```
BEGIN
  X = 4
  Y = 7
  X = Y
  Y = X
  Print X, Y
END
```

What output is produced?

- A. 4, 4
 - B. 4, 7
 - C. 7, 4
 - D. 7, 7
- 9** Which of the following is within the power of a work health and safety (WHS) inspector?
- A. Issuing fines
 - B. Issuing breach notices
 - C. Organising training for WHS members
 - D. Organising licences for potentially dangerous work
- 10** A worker is processing employee pay records. The worker has left the information displayed on the screen.
- What is one potential issue of this?
- A. Safety
 - B. Copyright
 - C. Confidentiality
 - D. Intellectual property

11 In an organisation, each user password must contain at least:

- one symbol (eg ! @ #)
- one uppercase character
- one lowercase character.

What type of password protection requirement has been specified?

- A. Reuse
- B. Length
- C. Complexity
- D. Change frequency

12 Which of the following is most likely a non-routine task in an ICT workplace?

- A. Running virus scans
- B. Performing full backups
- C. Troubleshooting software and hardware issues
- D. Conducting weekend or holiday maintenance tasks

13 Which of the following is a function of a structure chart?

- A. Creating a graphical user interface
- B. Identifying syntax errors in a program
- C. Testing the functionality of a program
- D. Representing the hierarchy of program modules

14 Consider the following code fragment.

```
Set sum to 0
For each number in the list
    add the number to sum
Next
Print sum
```

Which pair of control structures has been used?

- A. Selection and looping
- B. Sequence and iteration
- C. Selection and repetition
- D. Sequence and selection

15 The following numbers are to be sorted in ascending order using a bubble sort.

17	14	9	13
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What is the result of the first pass of the bubble sort?

- A.

14	17	9	13
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- B.

14	9	13	17
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- C.

9	13	14	17
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- D.

9	14	17	13
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Student Number

Section II

35 marks

Attempt Questions 16–21

Allow about 50 minutes for this section

Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.

Question 16 (4 marks)

(a) What is a *source code editor*? 2

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(b) Outline TWO types of documentation that are commonly found inside programming code. 2

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Question 17 (6 marks)

A team needs to design a new technology product.

- (a) Outline TWO creative thinking techniques that the team can use to generate ideas. **3**

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- (b) Describe common blockers that can affect the team when generating ideas for the new product. **3**

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Section II (continued)

Question 18 (7 marks)

- (a) A business is designing a privacy policy to protect its clients' personal information. **3**

Outline THREE key aspects that should be included in this policy.

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- (b) Outline the main steps in undertaking a privacy impact assessment (PIA). **4**

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Question 19 (7 marks)

- (a) Distinguish between a hazard and a risk. Include an example of each in your answer.

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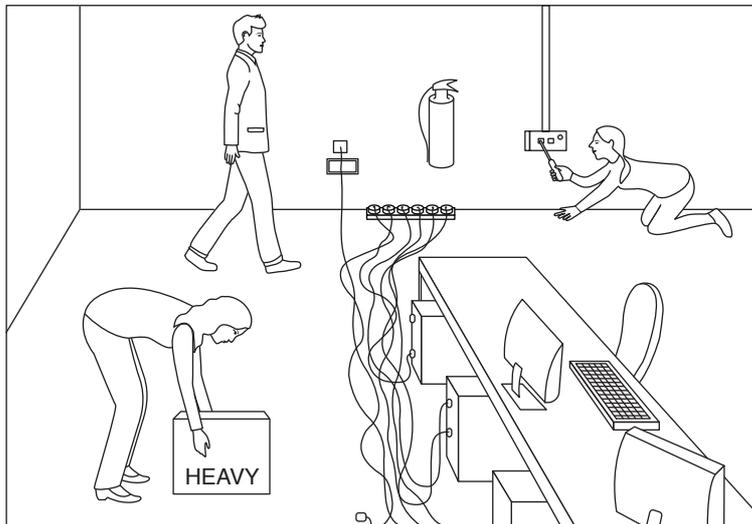
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- (b) The diagram shows a workplace.

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Justify strategies that could be used to reduce accidents and injuries in this workplace.

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Student Number

Section II (continued)

Question 20 (6 marks)

A project team in Australia is working with a team in another country to develop a computer game which will be commercially distributed.

- (a) Outline ONE benefit of using a compiler over an interpreter in this project. 2

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- (b) Explain how cross-cultural communication can be enhanced when developing this project. 4

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Question 21 (5 marks)

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A company is doing a stocktake of its staff laptop computers. The serial number and the purchase year of each laptop is stored in a sequential file called 'laptops.txt'.

A computer program is needed to display the serial number and the status of each laptop. If a laptop was purchased in 2021, its status should be 'needing replacement'. If a laptop was purchased in 2022, its status should be 'needing re-imaging'. No message is needed for laptops purchased in 2023. An appropriate error message should be displayed if a laptop was not purchased in the years 2021 to 2023 inclusive.

Write the algorithm for this computer program.

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Information and Digital Technology

Section III

15 marks

Attempt Question 22

Allow about 25 minutes for this section

Answer the question in a writing booklet. Extra writing booklets are available.

Question 22 (15 marks)

A company has decided to lease an online storage facility and transfer all of its data to it. Access to the online storage facility will be managed by the vendor.

- (a) Outline the types of information that should be included in the vendor's service agreement for the online storage facility. **3**
- (b) Using examples, describe how employees can be supported in the use of the new online storage facility. **4**
- (c) Justify workplace procedures that could be implemented to protect data stored in the online storage facility. **8**

Please turn over

Section IV

15 marks

Attempt Question 23

Allow about 25 minutes for this section

Answer the question in a SEPARATE writing booklet. Extra writing booklets are available.

Your answer will be assessed on how well you:

- demonstrate knowledge and understanding relevant to the question
 - communicate ideas and information using relevant workplace examples and industry terminology
 - present a logical and cohesive response
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Question 23 (15 marks)

An IT company is considering replacing the client support team with the use of a ‘chatbot’ to reduce costs and improve the efficiency of the client support service.

The chatbot is a piece of software that can simulate conversation with human users. The chatbot is equipped with a knowledge base. It can track helpdesk tickets and provide answers to a list of frequently asked questions.

Discuss the proposal to replace the client support team with a chatbot.

End of paper