RECURSO LIMITED

HONG KONG DIPLOMA OF SECONDARY EDUCATION MOCK EXAMINATION 2026

INFORMATION AND COMMUNICATION TECHNOLOGY
PAPER 1

8:30 am – 10:30 am (2 hours)

This paper must be answered in English

GENERAL INSTRUCTIONS

1. There are two sections, A and B, in this Paper.

2. Section A consists of multiple-choice questions in this question paper. Section B contains conventional questions printed separately in the Question-Answer Book.

3. Answers to Section A should be marked on the Multiple-choice Answer Sheet. Answers to Section B should be written in the spaces provided in the Question-Answer Book. **The Answer Sheet for Section A and the Question-Answer Book for Section B must be handed in separately at the end of the examination.**

INSTRUCTIONS FOR SECTION A (MULTIPLE-CHOICE QUESTIONS)

1. Read carefully the instructions on the Answer Sheet. After the announcement of the start of the examination, you should first stick a barcode label and insert the information required in the spaces provided. No extra time will be given for sticking on the barcode label after the 'Time is up' announcement.

2. When told to open this book, you should check that all the questions are there. Look for the words **'END OF SECTION A'** after the last question.

3. All questions carry equal marks.

4. **ANSWER ALL QUESTIONS**. You are advised to use an HB pencil to mark all the answers on the Answer Sheet, so that wrong marks can be completely erased with a clean rubber. You must mark the answers clearly; otherwise you will lose marks if the answers cannot be captured.

5. You should mark only **ONE** answer for each question. If you mark more than one answer, you will receive **NO MARKS** for that question.

6. No marks will be deducted for wrong answers.

Not to be taken away before the end of the examination session

Section A
There are 40 questions in this paper. Choose the most suitable answers.

1. Which of the following are the characteristics of the Information Age?

   (1) Less office space is needed.
   (2) It becomes harder to obtain information.
   (3) The demand for ICT-related jobs increases.

   A. (1) and (2) only
   B. (1) and (3) only
   C. (2) and (3) only
   D. (1), (2) and (3)

2. A computer receives four 8-bit data sequences. The last digit of each data sequence is a parity bit. It is known that two of the sequences contain an error.

First:	`1010 0001`
Second:	`0011 0110`
Third:	`1110 1010`
Fourth:	`1111 0110`

   Which of the following correctly describe the above situation?

	Corrupted data sequence	**Parity check**
A.	The first and third	Odd
B.	The second and third	Even
C.	The first and second	Even
D.	The second and fourth	Odd

3. Which of the following calculations of 8-bit numbers using two's complement representation will result in an overflow error?

   A. `0011 0010 + 0010 1000 + 0100 0001`
   B. `0110 0100 + 1111 1111 + 1110 1110`
   C. `1100 1000 + 1101 1100`
   D. `0110 1010 + 1010 1010`

4. Cherry creates a report in HTML format instead of DOCX format, what is the most probable reason behind?

   A. HTML provides better control over the printed page layout.
   B. HTML can include multimedia elements.
   C. HTML has higher security.
   D. HTML is a cross-platform format.

5. A mono channel (one channel) audio track with a duration of 1 minute is recorded at a sampling rate of 44.1 kHz and a bit depth of 16 bits. Which of the following values is closest to the file size of this uncompressed audio file?

   A. 5.0 MB
   B. 5.3 MB
   C. 10.1 MB
   D. 40.4 MB

6. Which of the following involves the conversion between analog and digital data?

(1) Compressing a movie file using data compression software.
(2) Recording a voice message on a smartphone.
(3) Playing the music through speakers.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

7. Which of the following is/are the advantages of Unicode over GB code?

(1) Unicode supports the English alphabet.
(2) Unicode can be used in mobile operating systems.
(3) Emojis can be displayed properly.

A. (3) only
B. (1) and (2) only
C. (2) and (3) only
D. (1), (2) and (3)

8. Ruby is the owner of a coffee shop. She tracks daily sales in a spreadsheet. To quickly identify large transactions, she creates a rule that automatically changes the background color of any cell in the "Transaction Amount" column to green if its value is higher than $500.

Which spreadsheet feature is used to create this automatic color change?

A. Conditional Formatting
B. Scenario manager
C. Find and Replace
D. Sorting

9. In a spreadsheet, which formula should be used to generate a random integer between 50 and 100, inclusive (i.e., both 50 and 100 can be generated)?

A. `=RAND()*50+50`
B. `=INT(RAND()*50)+50`
C. `=INT(RAND()*51)+50`
D. `=INT(RAND()*100)+50`

10. Given the following database table `Sales`:

SalesID	EmployeeID	SalesDate	Amount
S001	E1	2025/10/3	250
S002	E2	2025/10/3	100
S003	E1	2025/10/3	700
S004	E2	2025/10/4	800
S005	E3	2025/10/4	140
S006	E1	2025/10/4	300

To find the `EmployeeID` for each employee whose total sales amount is more than $500, which of the following SQL clauses are both required?

A. `WHERE` and `GROUP BY`
B. `WHERE` and `ORDER BY`
C. `HAVING` and `ORDER BY`
D. `GROUP BY` and `HAVING`

11. A library uses a database to store a list of all its books. The librarian wants to generate a formatted list of all books categorised by the author. What is the most appropriate method for this task?

A. Create a form using database software to search for and view the books.
B. Create a report using database software.
C. Export the entire book list to a spreadsheet and filter it by the author's name.
D. Manually type the book titles into a web authoring tool.

12. Which of the following matches for storage devices is correct?

	Storage Device	**Characteristic**
A.	Flash memory	volatile
B.	RAM	non-volatile
C.	CD-ROM	rewritable
D.	ROM	non-rewritable

13. Which of the following are the common specifications of a monitor?

(1) 144 Hz
(2) 120 ppi
(3) DisplayPort supported

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

14. A publisher purchased a laser printer instead of an inkjet printer for printing books. What are the possible reasons for this decision?

(1) The laser printer has a higher printing speed.
(2) The laser printer usually supports a higher color depth.
(3) The laser printer supports a wireless connection.

A. (1) only
B. (2) only
C. (1) and (3) only
D. (1), (2) and (3)

15. Customers can order their food through tablet computers in a restaurant. What are the advantages of using a tablet computer over a laptop for this purpose?

(1) Tablet computers have higher computational power.
(2) Tablet computers provide a more user-friendly interface for selecting menu items.
(3) Tablet computers are more portable.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

16. Which of the following are the advantage(s) of using Bluetooth over Wi-Fi for connecting a smartphone to a wireless headset?

(1) Lower power consumption
(2) Higher data transfer rate
(3) Simple set-up procedure

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

17. Which of the following is/are valid MAC address(es)?

(1) `00:1G:44:11:3A:B7`
(2) `98:01:A7:C0:B3:7D`
(3) `DE:AD:BE:EF:CA`

A. (2) only
B. (1) and (3) only
C. (1) and (2) only
D. (2) and (3) only

18. Which of the following statements about TCP/IP is **incorrect**?

A. TCP provides an error detection mechanism for data packets.
B. IP is responsible for dividing a file into multiple data packets.
C. IP routes data packets along different paths to their destination.
D. TCP reassembles data packets into a single file.

19. A user is streaming a 4K video on a slow Internet connection. The streaming service automatically switches the video quality to a lower resolution (e.g., 480p). What is the main reason for this?

A. To reduce the CPU load on the user's device.
B. To change the video's aspect ratio to better fit the screen.
C. To convert the video from a lossy to a lossless compression format.
D. To decrease the video's bitrate to reduce buffering.

20. Sally is adding an image to a webpage. The original image has dimensions of 1200 x 600 pixels. She amends the HTML code to set its display size to 600 x 300 pixels.

Which of the following statements is/are correct as a result of this code?

(1) The file size of the image will decrease.
(2) The displayed size of the image on the webpage will be 600 × 300 pixels.
(3) The displayed image will not be distorted.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

21. Which of the following statements about HTML are correct?

(1) Webpages' layout might be inconsistent across different browsers.
(2) HTML is case-sensitive.
(3) Not all tags have both an opening and a closing tag.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

22. Which of the following measures helps protect data privacy online?

(1) Verifying the URL starts with 'https://' before entering sensitive information.
(2) Clearing the browser's cookies when using public computer.
(3) Disclosing the full name and personal details on social media.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

23. Where can a digital certificate for an SSL connection be obtained?

A. Internet Service Provider (ISP)
B. Certification Authority (CA)
C. Internet Corporation for Assigned Names and Numbers (ICANN)
D. Domain name registration company

24. What is the output of the following algorithm?

```
X ← 10
Y ← 5
Z ← 0
IF X > Y THEN
   IF (X - Y) < 5 THEN
       Z ← X
   ELSE
       Z ← Y
ELSE
   Z ← X + Y
OUTPUT Z
```

A. 0
B. 5
C. 10
D. 15

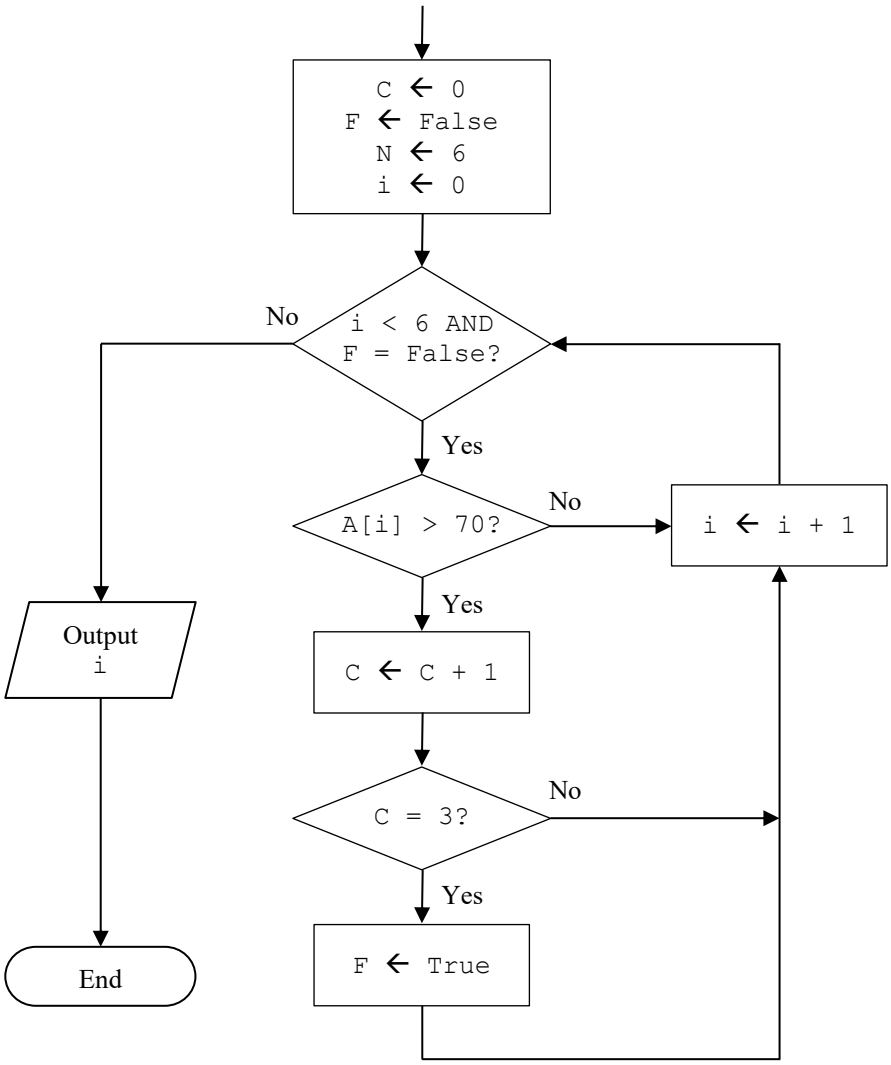
25. What is the output of the following algorithm?

```
C ← 0
T ← 1
REPEAT
   T ← T * 2
   C ← C + 1
UNTIL C >= 4
OUTPUT T
```

A. 4
B. 8
C. 16
D. 32

Go on to the next page

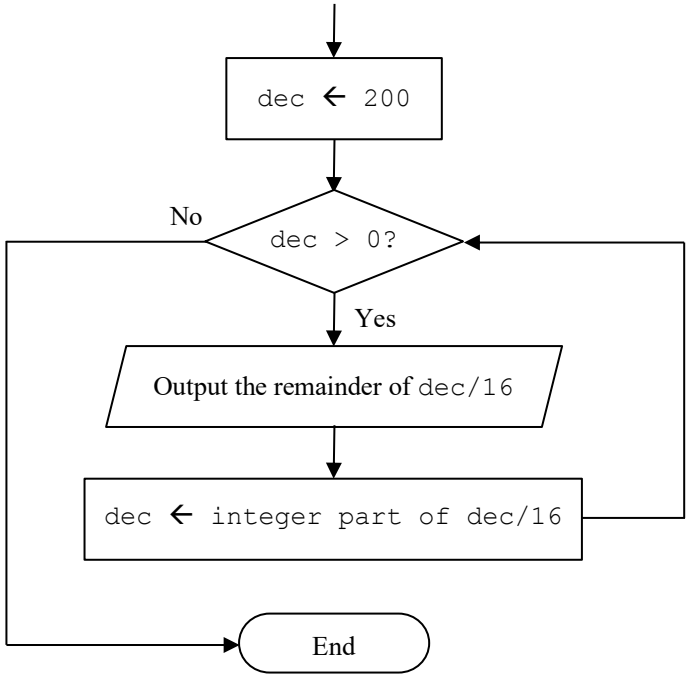
26. `A` is a 0-based array. The initial values of `A[0], A[1], A[2], A[3], A[4]` and `A[5]` are 88, 95, 72, 50, 99 and 45 respectively. Study the following segment of a flowchart:



What is the output?

A. 3
B. 4
C. 5
D. 6

27. Study the following segment of a flowchart:



What is the output?

A. 8 12
B. 12 8
C. C 8
D. 12 0

28. The initial value of A is:

A[1]	A[2]	A[3]	A[4]	A[5]
10	20	30	40	50

Suppose N = 5. What is the value of array A after the following algorithm is executed?

```
i ← 1
j ← N
WHILE i < j do
      TEMP ← A[i]
      A[i] ← A[j]
      A[j] ← TEMP
      i ← i + 1
      j ← j - 1
```

A. [50, 40, 30, 20, 10]
B. [50, 40, 30, 10, 20]
C. [10, 20, 30, 40, 50]
D. [50, 20, 30, 40, 10]

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29. Given the following two algorithms:

Algorithm 1

```
input K
N ← K
ans ← 0
for i from N downto 1 do
      ans ← ans + K
```

Algorithm 2

```
input K
N ← K
ans ← 0
while <condition> do
      ans ← ans + K
      N ← N - 1
```

Suppose two algorithms fulfill the same purpose. What is the missing condition in Algorithm 2?

A. `N > 1`
B. `N >= 1`
C. `N >= 0`
D. `N <= 1`

30. The final values of X and Y in the following two algorithms are intended to be the same.

Algorithm 1

```
X ← 0
Y ← 10
do
      X ← X + 1
      Y ← Y - 1
while (X < 5) and (Y > 6)
```

Algorithm 2

```
X ← 0
Y ← 10
repeat
      X ← X + 1
      Y ← Y - 1
until [missing part]
```

What is the missing part in Algorithm 2 to make it logically equivalent to Algorithm 1?

A. `(X < 5) AND (Y > 6)`
B. `(X >= 5) AND (Y <= 6)`
C. `(X < 5) OR (Y > 6)`
D. `(X >= 5) OR (Y <= 6)`

31. Study the following 2 algorithms:

ALG1
```
T ← 0
i ← 10
while i >= 1 do
      T ← T + i
      i ← i - 1
```

ALG2
```
T ← 0
i ← 11
repeat
      [loop-body]
until i = 0
```

ALG1 is rewritten as ALG2, which has the same purpose. Which of the following is the correct loop-body in ALG2?

A.
```
T ← T + i
i ← i - 1
```

B.
```
i ← i - 1
T ← T + i
```

C.
```
i ← i + 1
T ← T + i
```

D.
```
i ← i - 1
T ← T + (i - 1)
```

32. `text` is a string starting from index 1. The value as follows:

text[1]	text[2]	text[3]	text[4]	text[5]	text[6]	text[7]	text[8]
L	O	V	E	L	I	V	E

Study the following algorithm:

```
target ← "L"
temp ← ""

for i from 1 to 8 do
       if text[i] != target do
             temp ← concatenate temp and text[i]
```

What is the purpose of the above algorithm?

A. To create a new string consisting of only the character target from text.
B. To count the number of times the character target appears in text.
C. To create a new string with all occurrences of the target character removed.
D. To find the first position of the character target in text.

33. Which of the following best describes the purpose of the following algorithm?

```
input A
input B
while  A != B  do
       input A
       input B
```

A. data collection
B. data storage
C. data validation
D. data verification

34. Willis is developing a Smart Home Management System. He starts by breaking the overall system into several major modules, such as Lighting Control, Security Management and Climate Control.

Which of the following best describes the above method of problem analysis?

A. top-down approach
B. bottom-up approach
C. algorithm design
D. problem identification

35. What is the final value of the total after the following code is executed?

[Python Version]

```
total = 0
for i in range(5, 10):
       if i % 2 == 0:
              total = total + i
       else:
              total = total - i
```

[C++ Version]

```
int total = 0;
for (int i = 5; i < 10; ++i) {
       if (i % 2 == 0) {
              total = total + i;
       } else {
              total = total - i;
       }
}
```

[Pascal Version]

```
total := 0;
for i= 5 to 9 do
begin
       if i mod 2 = 0 then
              total := total + i
       else
              total := total - i;
end;
```

A. 3
B. 7
C. -5
D. -7

36. Kelly has written the following algorithm to determine the discount rate based on the quantity of items purchased.

```
input quantity
if (quantity > 50) then
   discount_rate ← 0.20
else if (quantity > 10) then
   discount_rate ← 0.10
else
   discount_rate ← 0.0
output discount_rate
```

Which of the following sets of test data is the most appropriate?

A. 10, 11, 50, 51
B. 5, 10, 11, 49, 50, 51
C. 0, 5, 20, 45, 60, 100
D. 0, 10, 50

37. Which of the following are the benefits of adopting modularity in software development?

(1) It allows different programmers to work on different modules at the same time.
(2) It helps to define the scope of the problem more quickly.
(3) It makes error correction easier.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

38. Sophia has drawn an image and posted it on social media. Marco and Thomas follow her social media account. Which of the following actions might violate the intellectual property rights of Sophia?

(1) Sophia further edits her image using image-editing software with an expired license.
(2) Thomas sells hard copies of Sophia's image.
(3) Marco shares Sophia's post using the 'share' function on the social media platform.

A. (2) only
B. (1) and (2) only
C. (2) and (3) only
D. (1), (2) and (3)

39. Which of the following are factors affecting the digital divide?

(1) Income level
(2) Geographical region
(3) Gender

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

40. When developing a machine learning model for the clustering of customer data, which of the following are considered ethical practices?

(1) Obtain consent from customers before using their personal data.
(2) Review the model regularly to ensure that it does not exhibit significant racial bias.
(3) Remove any identifiable personal data from datasets before the clustering.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

END OF SECTION A