

FUKIEN SECONDARY SCHOOL
S5 Final Examination (2020-2021)
Information and Communication Technology
Paper 1 (Section A)
(2 hours)

Date: 21st June 2021

Name: _____

Time: 8:30a.m. - 10:30a.m.

Class: _____ No.: _____

INSTRUCTIONS

1. When told to write your name, class and class number, write them on section A, section B as well as the multiple-choice answer sheet.
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.

There are 40 questions in this section. Choose the most suitable answers.

1. Which of the following is **not** appropriate for enhancing student's information literacy?
 - A. Watching documentaries about the ocean online
 - B. Searching for the installation password of a software package through an online discussion forum
 - C. Reading school newsletter through the school internet
 - D. Finding the history of computers through the Internet
2. A Hong Kong identify card number is wrongly entered into a computer system, as shown below:

Original number
A123456(3)

Wrong input
A213456(3)

Which of the following can help detect this error?

- (1) Range check
 - (2) Input data twice
 - (3) Check digit
- A. (1) and (2) only
 - B. (1) and (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)
3. Study the following online registration form:

Username:

Password: (minimum 8 characters)

Re-enter password:

Which of the following is/are involved in the online registration?

- (1) Data verification
 - (2) Data compression
 - (3) Data validation
- A. (1) only
 - B. (2) only
 - C. (1) and (3) only
 - D. (2) and (3) only

4. Which of the following decimal values is equivalent to 10100001 in 8-bit two's complement representation?
- A. 33
 - B. -33
 - C. 95
 - D. -95
5. A company has 30000 employees. Each employee has a staff number. What is the minimum number of bits required to represent the staff numbers?
- A. 5
 - B. 14
 - C. 15
 - D. 32
6. Amy uses JPG format instead of BMP format when scanning photos. What is/are the possible reason(s) for this?
- (1) To decrease the file size of the photos
 - (2) To increase the number of pixels per photo
 - (3) To increase the number of colours displayed
- A. (1) only
 - B. (2) only
 - C. (1) and (3) only
 - D. (2) and (3) only
7. Which of the following statements about streaming technology is/are correct?
- (1) A music performance can be viewed live.
 - (2) HTTP cannot be used.
 - (3) Illegal distribution of movies can be controlled.
- A. (1) only
 - B. (2) only
 - C. (1) and (3) only
 - D. (2) and (3) only
8. Eva creates a report with 200 pages. Which of the following word processing operations can reduce the number of pages used?
- (1) Change the line spacing of the text
 - (2) Change the text alignment
 - (3) Change the margins of pages
 - (4) Create a table of contents with hyperlinks
- A. (1) and (3) only
 - B. (1) and (4) only
 - C. (2) and (3) only
 - D. (2) and (4) only

9. Which of the following elements can be included in a PDF file?
- (1) Photos
 - (2) Video
 - (3) Hyperlinks
- A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)
10. In order for a factory manager to decide on the number of machines to be bought to produce pencils, he needs to consider time and cost constraints. What spreadsheet feature should he use to do this?
- A. Pivot table
B. Multiple worksheets
C. 'What-if' analysis
D. Sorting data using multiple criteria
11. In the following spreadsheet, the formula, '=SUM(A1:C3)', is entered in E1. What value is displayed in F2 after the formula in E1 is copied into F2?

	A	B	C	D	E	F
1	5	3	1		28	
2	5	2	5			
3	2	4	1			
4						

- A. 12
B. 16
C. 19
D. 28

Answer Questions 12 and 13 with reference to the following database table STUDENT.

STUDENT

NAME	SID	CLASS
John Ho	18110	1A
Mary Li	09544	2C
Peter Wong	17623	3B
Greg Li	06308	2A

⋮

12. What is/are the possible data type(s) for SID in STUDENT?

- (1) Integer
- (2) Character
- (3) Boolean

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

13. STUDENT is exported into a spreadsheet. What spreadsheet feature produces a similar output to executing the following SQL command in a DBMS tool?

```
SELECT CLASS, COUNT (*)  
FROM STUDENT  
GROUP BY CLASS
```

- A. Sorting
- B. Cell references in formulas
- C. Object Linking and Embedding
- D. Pivot table

14. Arthur inserts a video clip in a presentation file and sends an email with the file to Betty. When Betty opens the file, there is only text and the video is missing. Why?

- A. The video is infected with a computer virus and has been removed by an antivirus program.
- B. The presentation file is password-protected.
- C. Linking instead of embedding is used when inserting the video in the presentation file.
- D. The video is in MP4 format instead of AVI format.

15. Which of the following statements about mail merge is correct?

- A. Only one file is needed in each mail merge.
- B. Mail merge is mainly used for sending email.
- C. Data can be stored and filtered for a mail merge.
- D. Mail merge usually involves presentation software.

Answer Questions 16 and 17 with reference to the following passage.

Mary uses presentation software to create a self-running slide show with verbal commentary. She uploads the slide show to her website so that the public can view it.

16. Which of the following must Mary do when creating the slide show?

- A. Set the timing of each slide
- B. Create hyperlinks in the slides
- C. Create animation effects in the slides
- D. Insert background music in the slides

17. When Mary chooses the file format for the slide show, which of the following is important?

- A. Encryption support
- B. Cross-platform
- C. Object Linking and Embedding (OLE)
- D. SQL support

18. Read the configuration of a desktop computer below:

- Intel® Core™ i7 CPU
- 16GB DDR4 RAM
- 1TB SSD
- 802.11ac Wi-Fi

What information can be found out from the configuration?

- (1) The viewable size of the display unit
- (2) The maximum data transfer rate of a wireless network
- (3) The time to start up a computer

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

19. Which of the following statements about the fetch-decode-execute cycle in a CPU is correct?

- A. Registers are used in the cycle.
- B. The cycle is an assembly language program.
- C. The sequence of the instructions in the cycle mainly depends on the CPU clock rate.
- D. The cycle is mainly used to perform arithmetic operation.

20. In a Point-Of-Sale system in a restaurant, which of the following is/are the reason(s) for using thermal printers to print receipts?
- (1) The receipt printout can be kept longer.
 - (2) It is quiet during printing.
 - (3) The printing time is short.
- A. (1) only
 - B. (2) only
 - C. (1) and (3) only
 - D. (2) and (3) only
21. Mary wants to buy a keyboard for her tablet computer. Which of the following connections is/are commonly used for keyboards?
- (1) Fibre optics
 - (2) USB cable
 - (3) Bluetooth
- A. (1) only
 - B. (2) only
 - C. (1) and (3) only
 - D. (2) and (3) only
22. Peter upgrades a server by replacing the hard disk with a solid-state disk (SSD). Which of the following properties of SSD benefit(s) the upgrade?
- (1) Higher data transfer rate
 - (2) Lower power consumption
 - (3) Smaller storage capacity
- A. (2) only
 - B. (3) only
 - C. (1) and (2) only
 - D. (1) and (3) only
23. Joseph installs network-attached storage (NAS) in the office network that operates as a file server. If he installs more cache memory in the NAS, which of the following can be greatly improved?
- A. Storage capacity
 - B. Flexibility of user's access rights
 - C. Network bandwidth
 - D. Data throughput

24. What information is usually provided by the system monitoring software in an operating system?
- (1) Current processes
 - (2) Memory usage
 - (3) Network traffic
- A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)
25. Which of the following statements about open source software is correct?
- A. Open source software is written by open source programming languages.
B. Open source software is executed in open source operating systems.
C. The source code can be copied, modified and redistributed freely.
D. Private companies cannot use open source software to make a profit.
26. Bank customers can withdraw cash from their accounts through Automated Teller Machines (ATMs). Which of the following systems best describe(s) this operation?
- (1) Interactive system
 - (2) Real-time system
 - (3) Batch processing system
- A. (2) only
B. (3) only
C. (1) and (2) only
D. (1) and (3) only
27. Which of the following is the major function of a switch in a school computer network?
- A. Facilitate data transmission between computers
B. Prevent unauthorised access
C. Increase the network bandwidth
D. Provide email services for users
28. Mr Li considers some communication links for building a network in a company and compares their effective data transfer rates. Which of the following comparisons is correct?
- A. Cat 6 (twisted pair) < Satellite < Fibre optics
B. Satellite < Cat 6 (twisted pair) < Fibre optics
C. Cat 6 (twisted pair) < Fibre optics < Satellite
D. Satellite < Fibre optics < Cat 6 (twisted pair)

29. Peter is going to set up a web site for his new company so that customers can access his web site through any one of the following links:

web.goodcompany.hk
www.goodcompany.hk
www.goodcompany.com.hk
www.goodcompany.com
web.goodcompany.com

How many domain name(s) does he need to register?

- A. 1
 - B. 2
 - C. 3
 - D. 4
30. David answers the following question in his school assignment: 'What is the history of the HKEAA?' He uses a search engine and finds the following paragraph:

The HKEAA was established in 2077...

Which of the following actions is/are appropriate?

- (1) Put the entire paragraph in a search engine and search for similar results
 - (2) Browse other web sites to validate the information
 - (3) Copy the paragraph to the assignment
- A. (1) only
 - B. (2) only
 - C. (1) and (3) only
 - D. (2) and (3) only
31. Mary creates a file in HTML format instead of text format. Why?
- (1) Text format is not cross-platform.
 - (2) The file can store hyperlinks.
 - (3) Videos can be displayed when opening the file.
- A. (1) and (2) only
 - B. (1) and (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)

32. On a web page, some data are entered using a drop-down list instead of a text box, as shown below. What are the major benefits of this design?

Hong Kong Museum of Art (10 Salisbury Road, Tsim Sha Tsui, Kowloon)	▼
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- (1) Decrease the input time
 - (2) Reduce input errors
 - (3) Allow more input words
- A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)
33. When solving a problem in a project, Mary needs to define the scope of the problem precisely. What is/are the major reason(s) for doing this?
- (1) She can break down the problem into sub-problems effectively.
 - (2) She can use a truth table to illustrate the solution.
 - (3) She can ignore the boundary cases when testing the algorithm.
- A. (1) only
B. (2) only
C. (1) and (3) only
D. (2) and (3) only
34. In an IT project, Tom has written the source code. He tests it with valid input data items. What should he do next?
- A. Check the modularity of the program design
B. Write the user manual
C. Draw the flowchart
D. Continue to test the program with invalid data items

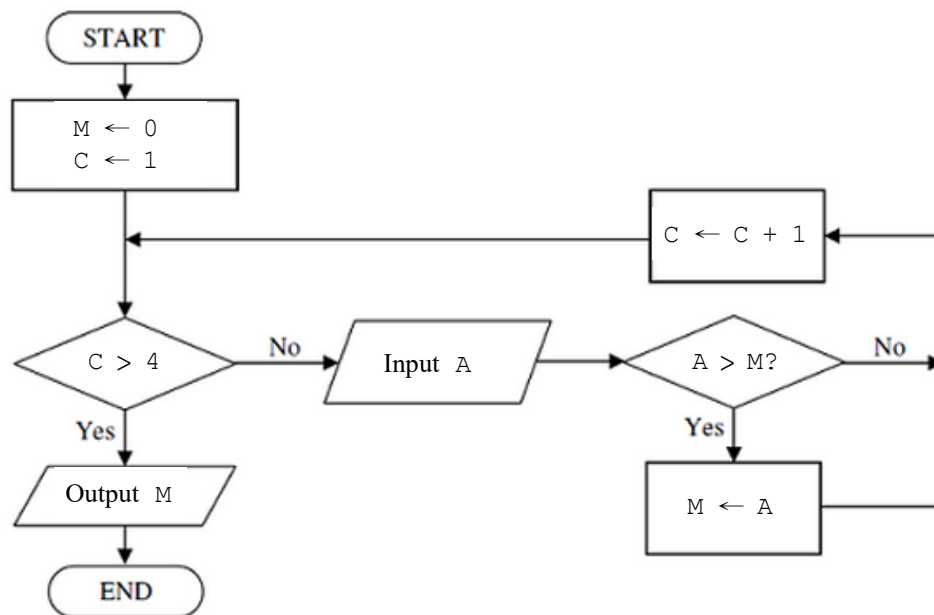
35. Dry run the following algorithm.

```
X ← 1
Y ← 20
while X < Y
    output 'A'
    X ← X + 2
    Y ← Y - 2
```

How many character 'A' s are displayed?

- A. 5
B. 6
C. 10
D. 20

36. The following flowchart illustrates an algorithm that outputs the maximum value of four input numbers.



Which set of input numbers **cannot** produce the correct result for the above algorithm?

- A. 0, 0, 0, 0
 - B. -8, 7, 6, -3
 - C. -2, -5, -4, -6
 - D. 0, -1, -5, -9
37. The following two pseudo code segments are used for searching.

S1	S2
<pre> J ← 1 while J ≤ 10000 if st = N[J] Found ← J J ← J + 1 </pre>	<pre> Flag ← 0 J ← 1 while J ≤ 10000 and Flag = 0 if st = N[J] Found ← J Flag ← 1 J ← J + 1 </pre>

When comparing the execution times of the two segments, which of the following statements is correct?

- A. S1 is generally faster.
- B. S2 is generally faster.
- C. They are more or less the same.
- D. The comparison cannot be determined.

38. What is the major advantage of using an array in algorithm design?

- A. The modular approach can be used in the design.
- B. It is useful in iteration design.
- C. The size of an array is flexible.
- D. The memory used is less.

39. A bank updates its automatic teller machine system with new restrictions on cash withdrawals, as follows:

- Available cash notes \$100, \$500 and \$1000
- Minimum withdrawal amount = \$200
- Maximum withdrawal amount = \$10000

Which of the following sets of withdrawal amounts should be used as test data for this system update?

- A. 50, 500, 7000, 8000, 9000, 10000
- B. 100, 200, 300, 500, 1000, 30000
- C. 100, 200, 600, 950, 10000, 11000
- D. 100, 1000, 15000, 20000, 25000, 30000

40. Study the following algorithm.

```
INPUT n
IF n < -6 THEN
    y ← y + 2
ELSE IF n > 9 THEN
    y ← y - 2
ELSE y ← y × 2
```

Which of the following sets of input data is most suitable for testing the algorithm?

- A. -6, 0, 9
- B. -2, 0, 1, 2
- C. -20, -6, 0, 9, 15
- D. -20, -10, 0, 1, 10, 20

END OF SECTION A