福 建 中 學

FUKIEN SECONDARY SCHOOL

S6 Mock Examination (2021-2022)

Information and Communication Technology

Paper 1 (Section A)

(2 hours)

Date: 27th January 2022   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. A computer system uses 32 bits to store an integer value. Amy would like to store the following in URT-8 encoding:

   ICT MOCK 2021

   How many bytes does it occupy?

   A. 11
   B. 13
   C. 39
   D. 41

2. In a school's Sports Day, the students are grouped by genders (male and female) and grades (A to C). The events include 12 types of tracks events and 5 types of field events. The following table is used to show all the combinations with identification codes starting from 1.

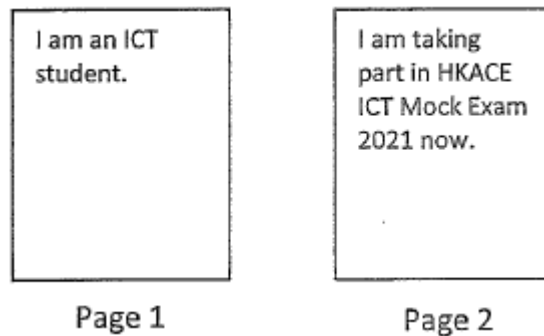 | Identification Code | Grade | Gender | Event Types | Event |
   |---|---|---|---|---|
   | 1 | A | male | Track | 100 meters |
   | 2 | C | male | Field | Long Jump |
   | 3 | B | female | Track | 400 meters |
   | 4 | C | female | Field | High Jump |
   | … | … | … | … | … |

   At least how many bits should the identification code occupy?

   A. 6
   B. 7
   C. 8
   D. 9

3. In a computer system, the values A, B and C are 12-bit numbers where

   A is represented by `1110 1011 1001` in sign-and-magnitude,
   B is represented by `1110 1011 1001` in two's complement and
   C is represented by `1111 1101 0000` in two's complement.

   Which of the following correctly arrange the three numbers in ascending order?

   A. $A < B < C$
   B. $A < C < B$
   C. $B < C < A$
   D. $C < A < B$

4. In a word processor, Tom would like to type some text in an A4 paper on 2 pages
    as follows.

    I am an ICT
    student.

    I am taking
    part in HKACE
    ICT Mock Exam
    2021 now.

    Page 1   Page 2

    Which of the following can help Tom create these 2 pages?

        (1) Line break(s)
        (2) Page break(s)
        (3) Section break(s)

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

5. Mary puts a video file A inside a presentation file B by Object Linking and
    Embedding (OLE). Which of the following matching is **not** correct?

	Method	Action on A	Result on B
A.	Linking	Change the directory	The link to the video is broken.
B.	Linking	Update the content	The video is updated.
C.	Embedding	Change the directory	The video cannot be played.
D.	Embedding	Update the content	There is no effect.

6. If even parity check is used to check the following four sets of 8-bit binary
    numbers, how many sets of incorrect data will be detected?

                10011010 00101111 11001110 01010111

    A. 0
    B. 1
    C. 2
    D. 3

7. What information technology professionals are being recruited in the following
    job advertisement?

Region: Admiralty	Industry: Business Services
Responsibilities: Development of core modules and solving technical problems encountered in software development. Writing and testing source code of the system. Required to know a variety of programming languages, database systems and high-level web page writing techniques.	

   A. System analyst
   B. Programmer
   C. Database administrator
   D. Technical support staff

8. Kary used a video editing software to create a three-minute Full HD movie (with
    resolution 1920×1080) with a frame rate of 25 fps and a 24-bit color depth. She
    compressed the video into an MP4 file format with a compression ratio of 10:1.
    What would be the file size of the movie?

   A. About 3 GB
   B. About 5 GB
   C. About 7 GB
   D. About 9 GB

9. A user uploaded a video file to cloud storage. What is the benefit of using
    MPEG-1 format instead of AVI format in this case?

   A. Decrease the time duration of the video
   B. Decrease the file size of the video
   C. Increase the number of pixels in the video
   D. Increase the number of colors in the video

10. A user registers a new email account and the system requires him to confirm his
    password as shown in the following figure. Which of the following methods is
    used to verify the password by asking user to re-enter the password?

    Password   Confirm password

    Use 8 or more characters with a mix of letters,
    numbers & symbols.

   A. Input Data Twice
   B. Double Data Entry
   C. Check Digit
   D. Parity Check

11. A user wants to create a summary table of a set of data with two-dimensional comparison table based on any two fields of the data set. Which of the following will be used?

    A.   Scenario Manager
    B.   Goal Seek
    C.   Pivot Table
    D.   Pivot Chart

12. What is the major benefit of using SQL in a database management system?

    A.   It provides a graphical user interface to manipulate and display the data.
    B.   It prints data in a professional and easy-to-read layout.
    C.   It retrieves data from one or more tables that meets specified criteria.
    D.   It makes data entry easier by controlling the values that users can input.

13. What are the dimensions of the image if a 6" × 9" photo is scanned by a scanner of 450 dpi resolution and 16-bit color depth?

    A.   50 × 75 pixels
    B.   800 × 1200 pixels
    C.   2700 × 4050 pixels
    D.   43200 × 64800 pixels

14. Which of the following is/are (a) real-time processing system(s)?
        (1)   Smart home system
        (2)   Global Positioning System
        (3)   High-speed railway online ticketing system

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

15. Which registers are involved in executing instructions during the machine cycle?
        (1)   Accumulator
        (2)   Memory address register (MAR)
        (3)   Memory data register (MDR)

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

16. Many stores use thermal printers to print receipts instead of laser printers. What is the main reason?

   A.   Printing with a thermal printer is less expensive.
   B.   Thermal printers have a higher resolution.
   C.   Thermal printers provide color printing.
   D.   Printed products using a laser printer are easily damaged and difficult to store.

17. The specifications of a central processing unit (CPU) are as follows:

Word length	64 bit
Clock rate	3.32 GHz
Cache memory	13.75 MB L3

   Which of the following descriptions about the CPU is correct?

   A.   The CPU can handle a 64-digit binary data in one time.
   B.   The CPU can handle 3.32×10^9 instructions in one minute.
   C.   The CPU has 13.75 MB data storage.
   D.   The data transfer rate of the CPU is 3.32 GB/s.

18. Random Access Memory (RAM) cannot be replaced by flash memory. The best reason is

   A.   flash memory is volatile.
   B.   the storage cost of flash memory is higher.
   C.   flash memory has larger capacity.
   D.   the data transfer rate of flash memory is much lower.

19. Which of the following is/are hardware connection interface?

         (1)   PCIe
         (2)   SSL
         (3)   HDMI

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

20. Which of the following about distributed processing system is/are correct?

        (1) A distributed processing system must work in a networked environment.
        (2) A process is divided into different computational threads and executed in different CPUs.
        (3) The security of a distributed processing system is usually higher than other systems.

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

21. Bob changes the hard disk of his desktop PC from magnetic disk drive to solid-state drive (SSD). What is his main reason for doing this?

    A. Larger storage capacity
    B. Faster accessing speed
    C. Cheaper cost per storage unit
    D. Higher shock resistance

22. A supermarket uses dot-matrix printers instead of thermal printers to print credit card receipts. What are the major reasons for using dot-matrix printers?

        (1) Less printing noise
        (2) Make carbon-copies
        (3) More durable receipts

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

23. John is watching a webcasting event. He finds that the quality of the video is poor. Which of the following is/are possible cause(s)?

        (1) John is using an Internet connection with low bandwidth.
        (2) There are too many users watching the same event.
        (3) The performance of the webcasting server is low.

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

24. Peter wants to connect a mobile device to a local network. Which of the following is necessary for the mobile device?

    A. Graphical Processing Card
    B. Firewall
    C. Anti-Virus Software
    D. Driver for the network interface card

25. Which of the following is an effect of inserting an image in an HTML file?

    A. The image is embedded in the HTML file.
    B. Only the path of the image is added in the HTML file.
    C. The file size of the HTML file is greatly increased.
    D. The image can be viewed in any devices while only the HTML file is
        downloaded.

26. Which of the following is/are the difference(s) between a network printer and an
    ordinary printer?

    (1) Network printer can be shared but ordinary printer cannot.
    (2) Network printer has NIC but ordinary printer does not.
    (3) Network printer can support Wireless Printing function but ordinary
         printer cannot.

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

27. Which of the following belong(s) to wireless connection?

    (1) Satellite
    (2) Wi-Fi
    (3) Microwave Broadband

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

28. Refer to the following pseudocode:

```
IF (MARK>=50) AND (MARK<=65) THEN
     OUTPUT MARK
```

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

    A. 50, 52, 53, 64, 65
    B. 48, 49, 50, 52, 65
    C. 45, 50, 55, 65, 80
    D. 50, 53, 64, 65, 66

29. What is the output of the following algorithm?

```
X ← 20
Y ← 5
WHILE X > Y
    Y ← Y + 1
OUTPUT Y
```

  A. 15
  B. 19
  C. 20
  D. 21

30. When the following algorithm is executed, what kind(s) of error(s) will occur?

```
X ← 10
Y ← 5
WHILE Y >= 0
    X ← X/Y
    Y ← Y-1
```

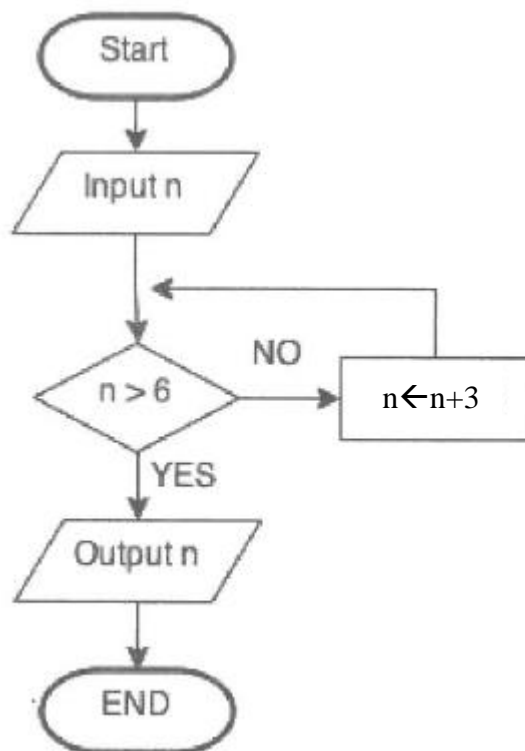   (1) Syntax error
    (2) Run-time error
    (3) Logic error

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

31. What is the output of the program?

```
X ← 0
Y ← 1
While X < 5
    X ← X + 1
    Y ← X + Y
Output Y
```

  A. 5
  B. 11
  C. 16
  D. 22

32. Consider the flowchart below:

If the input value is 0, what is the output value?

A. 0
B. 6
C. 9
D. 12

Answer Questions 33 to 35 with reference to the following pseudo codes.

```
x ← 0
For i ← 0 to 10
    x ← x + i
Output x
```

33. What is the output of the program?

A. 1
B. 10
C. 45
D. 55

34. Which programming construct has been applied?

A. Conditional statements
B. Pre-test Loop
C. Post-test Loop
D. Use of Sub-program

35. Which of the following errors will occur if we change x ← x + i to x ← x/i?

    A. Overflow error
    B. Syntax error
    C. Run-time error
    D. Garbage in garbage out (GIGO)

36. Jane is signing up for a web-based email account and she inputs a user ID and a password using a notebook computer. However, she is also required to enter a verification code sent to her mobile phone by the web-based email system. Why is this necessary?

    A. The system wants to check whether Jane has a mobile phone or not.
    B. The system can check the Internet connection speed of Jane's notebook computer.
    C. The system can collect more personal information of Jane.
    D. It adds an extra layer of security to Jane's email account.

37. The government is planning to build a territory-wide Wi-Fi network in all government and subsidized schools in Hong Kong. What issue is the Government addressing?

    A. E-learning
    B. E-government
    C. Digital textbooks
    D. Digital divide

38. Which of the following is the main benefit of data encryption?

    (1) Prevent data from being intercepted by hackers
    (2) Prevent data from being read by hackers
    (3) Prevent data from being modified by hackers

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

39. Which of the following is the advantage of using open-source software?

    A. Users can modify the source code to meet actual needs.
    B. Its performance is better than commercial software.
    C. It has better technical support as more people know the source code.
    D. The compatibility is higher than commercial software.

40. Which of the following is/are the main purpose(s) of adopting ergonomic design?

       (1)   Avoid repetitive muscle strain
       (2)   Improve user productivity
       (3)   Add additional functions to computer devices

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

END OF SECTION A