

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD
General Certificate of Education Examination

0795 COMPUTER SCIENCE 1

JUNE 2019

ADVANCED LEVEL

Centre Number	17075
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Mobile phones are NOT allowed in the examination room

MULTIPLE CHOICE QUESTION PAPER

One and a half hours

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

1. USE A SOFT HB PENCIL THROUGHOUT THE EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the examination begins:

3. Check that this question booklet is headed "Advanced Level – 0795 Computer Science 1"
4. Fill in the information required in the spaces above.
5. Fill in the information required in the spaces provided on the answer sheet using your HB pencil:
Candidate Name, Exam Session, Subject Code and Candidate Identification Number.
Take care that you do not crease or fold the answer sheet or make any marks on it other than those asked for in these instruction.

How to answer the questions in this examination

6. Answer **ALL** the **50** questions in this Examination. All questions carry equal marks.
7. Each question has **FOUR** suggested answers: **A, B, C** and **D**. Decide which answer is appropriate. Find the number of the question on the Answer Sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen.
For example, if **C** is your correct answer, mark **C** as shown below:
[A] [B] [**C**] [D]
8. Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully, then mark your new answer.
9. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back to this question later.
10. Do all rough work in this booklet using the blank spaces in the question booklet.
11. **At the end of the examination, the invigilator shall collect the answer sheet first and then the question booklet. DO NOT ATTEMPT TO LEAVE THE EXAMINATION HALL WITH IT.**

Turn Over

1. The number 23.25 translated into a normalized floating point number, with a 10-bit mantissa and a 6-bit exponent.
- A 0110110000 000101
 - B 0101110000 000001
 - C 0101110100 000101
 - D 0000010111 000100

2. Two registers involved in the fetch-execute cycle are:
- A The program counter and the stack pointer
 - B The Accumulator and the program counter
 - C The accumulator and the current instruction register.
 - D The memory address register and the memory data register

3. A NAND gate has inputs A and B. It's output is connected to both inputs of another NAND gate. An equivalent gate for these two NAND gates is a(n):
- A OR gate.
 - B AND gate.
 - C NOR gate.
 - D XOR gate.

4. The Octal equivalent of the hexadecimal code F3A1 is:
- A 173101.
 - B 176541.
 - C 176451.
 - D 178661.

5. The address bus of a certain computer has 8 lines. What is the maximum number of addressable memory cells?
- A 265
 - B 256
 - C 252
 - D 255

6. Decimal equivalent of the binary number 101001.1011 is:
- A 41.7875.
 - B 41.5875.
 - C 41.6875.
 - D 41.1875.

7. In register addressing mode operands are examined in:
- A Cache memory.
 - B Secondary storage.
 - C The CPU.
 - D Primary memory.

8. In an instruction where the address part points to the address of actual data, the addressing mode is:
- A Immediate addressing.
 - B Direct addressing.
 - C Indirect addressing.
 - D Index addressing.

9. On receiving an interrupt, the CPU:
- A Finishes executing the current instruction and moves to the interrupt service routine.
 - B Immediately moves to the interrupt service routine without completing current instruction.
 - C Releases the control on I/O lines and memory lines.
 - D Makes any peripheral device that requested the interrupt to wait for a fixed interval of time.

10. A CPU has a 16-bit program counter. This means that the CPU can address:
- A 16K memory locations.
 - B 32K memory locations.
 - C 64K memory locations.
 - D 256K memory locations.

11. Which of the following sources of interrupt has the highest priority?
- A Division by zero.
 - B Real-time clock.
 - C Memory parity error.
 - D Keyboard key pressed.

12. The concept of pipelining is most effective in improving performance if the tasks being performed in different stages:
- A Require different amounts of time.
 - B Require about the same amount of time.
 - C Require different amount of time with time difference between any two tasks being same.
 - D Require different amount with time difference between any two tasks being different.

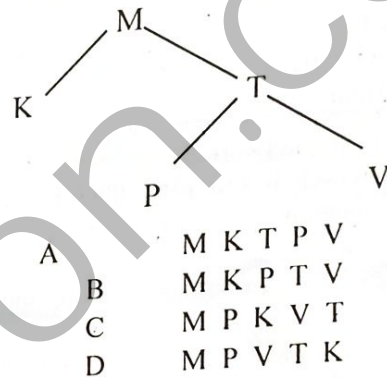
13. A microprocessor has a data bus with 64 lines and an address bus with 32 lines. The maximum number of bits that can be stored in memory is:
- A 32×2^{32} .
 - B 32×2^{64} .
 - C 64×2^{32} .
 - D 64×2^{64} .

14. The simplified form of the expression $AB+ABC$ is:
- A AB.
 - B $A(B+C)$.
 - C $AB+AC$.
 - D ABC.

15. The virtual memory of a computer system may be:
- Of unlimited size.
 - As big as the maximum addressing capability of the computer system.
 - Of size equivalent to the total capacity of secondary storage plus that of RAM.
 - None of the above.
16. Which of the following is NOT an advantage of Dynamic RAMs?
- High density.
 - Low cost.
 - High speed.
 - No need of memory refresh.
17. In the memory hierarchy the fastest memory is:
- RAM.
 - Cache.
 - CPU registers.
 - Virtual Memory.
18. In a token ring network:
- Each node has to 'grab' the token at a designated time and send or receive a message
 - Messages can be passed round the ring in either direction
 - Message tokens can simultaneously be passed around the ring
 - The message is passed to the correct recipient by a central computer
19. The highest data rate is provided by which of the following media?
- Coaxial cable.
 - Optical fibre.
 - Microwave.
 - Satellites.
20. A multi-programming computer is one which:
- Has several processors working in parallel.
 - Having multiple users working at the same time.
 - Is capable of running two or more programs apparently simultaneously.
 - Multiple programs are made to run at the same time.
21. One job of the scheduler is to:
- Ensure hardware resources are kept free for when they are needed.
 - Provide acceptable response time to interactive users.
 - Ensures that one process does not accidentally access another's memory locations.
 - Select a scheduling algorithm to achieve maximum throughput.
22. A real-time operating system is most likely to be used for which of the following task?
- Controlling access to a shared resource in a network.
 - Ensuring that system clock works correctly on a server.
 - Managing the access to system files in a laptop computer.
 - Controlling the fuel injection system of an automobile engine.
23. A top-to-bottom relationship among the items in a database is established by a:
- Hierarchical schema.
 - Network schema.
 - Relational schema.
 - Object schema.
24. The level of data abstraction which describes how the data is actually stored in a database system is:
- Conceptual level.
 - Physical level.
 - File level.
 - None of these.
25. A data model is:
- Used to describe structure of a database.
 - Set of basic operations on the database.
 - Both (A) and (B).
 - None of the above.
26. Managers who are potential users of an MIS:
- Describe desired information needs.
 - Identify desired information needs.
 - Evaluate alternate equipment configurations.
 - Identify optimum equipment configurations.
27. Program-data independence in the context of a DBMS means that changes to:
- The content of data files do not necessitate changes to the program.
 - The program does not affect the contents of the files.
 - The program does not affect the structure of the data files.
 - The structure of the data files do not affect the program.
28. A table in third normal form is one which:
- Has only one primary key
 - Is linked to another table by means of a foreign key
 - Have no repeating fields
 - Contains no non-key dependencies

29. An attribute in the context of a relational database may be defined as:
 A Something about which data is held.
 B A column of a table.
 C A row in a table.
 D A key field of a table.
30. A process may be at any time *running*, *ready* or *suspended*. Which of the following statements is true?
 A A process will join the queue of suspended jobs if, while it is running, the time slice expires.
 B A process is *ready* if it is waiting for an I/O device to become free
 C A process is running if it is in memory, waiting for the process to become free.
 D A process is suspended if it is waiting for an I/O device to become free.
31. Which of the following languages is suitable to use to program a device driver (e.g. a printer driver)?
 A Java.
 B Pascal.
 C Assembly Language.
 D C++.
32. The difference between a linear array and a record is:
 A An array is suitable for homogeneous data but the data items in a record can be of different data types.
 B A record may not have a natural ordering in opposed to linear array.
 C Record entries can nest to form a hierarchical structure but a linear array does not.
 D All of above.
33. At which stage of compilation will errors (a) and (b) be detected:
 Error (a): the name of a variable has more characters than are permitted
 Error (b): a closing parenthesis (bracket) is omitted from an arithmetic expression.
 A (a) syntax, (b) lexical
 B (a) lexical, (b) syntax
 C (a) semantic, (b) code generation
 D (a) lexical, (b) semantic
34. A variable P is called a pointer variable if it:
 A Contains the address of a data item.
 B Points to the address of the first element in some data item.
 C Can store only memory addresses.
 D Contain a data item and its address.

35. Which of the following data structures CANNOT be used to store non-homogeneous data elements?
 A Pointers.
 B Records.
 C Arrays.
 D None of the above.
36. Which of the following data structures is best used to store homogeneous data elements?
 A Arrays.
 B Records.
 C Pointers.
 D None of the above.
37. The following tree is traversed using pre-order traversal. In which order are the nodes printed out?



38. Which of the following algorithms is best for searching for an item in an ordered list of numbers?
 A Binary search.
 B Sequential search.
 C Quick search.
 D Bubble search.
39. The detailed study of an existing system when developing an information System is referred to as:
 A System Planning.
 B System Analysis.
 C Feasibility Study.
 D System Design.
40. What is the objective of a test strategy for a new program?
 A To ensure that the program compiles without errors.
 B To prove that the program has no errors.
 C To establish which data will allow the program to run without crashing.
 D To try to provoke program failure.

41. We use them to manipulate and disseminate information among individuals and organizations, possibly over long distances.
A Management Information System
B Information & Communication System.
C Geographic Information System
D Data Communication System.
42. In which step of the SDLC could project termination be done?
A Design phase.
B System Maintenance phase.
C Feasibility Study phase.
D Coding phase.
43. Management information systems
A create and share documents that support day-today office activities.
B process business transactions (e.g., time cards, payments, orders, etc.).
C capture and reproduces the knowledge of an expert problem solver.
D use the transaction data to produce information needed by managers to run the business.
44. Which of the following is a required condition for binary search algorithms?
A The list must be sorted.
B There should be the direct access to the middle element in any sub list.
C The number of elements in the list should be finite
D An item found can always be obtained as a middle element.
45. During program compilation, which of the following data structures is used to hold return addresses when a procedure is called?
A Stack.
B Array.
C Queue.
D Record.
46. Which step of SDLC performs cost-benefit analysis?
A Feasibility study.
B Analysis.
C Design.
D None of the above.
47. Prototyping is performed by:
A Client.
B Developer.
C Manager.
D Both A & B above.
48. Which one of the following testing is performed by an end-user?
A Acceptance testing.
B Unit testing.
C Integration testing.
D None of the above.
49. In computing a user-interface:
A Helps users to communicate with the computer
B Converts a program into a machine usable form.
C Transmits data to remote locations as packets.
D Is only a graphical interface.
50. Verification and validation consists of a variety of _____ activities.
A Design.
B Analysis.
C Maintenance.
D Software quality assurance.

STOP

GO BACK AND CHECK YOUR WORK