

SOUTH WEST REGIONAL MOCK EXAMINATION

GENERAL EDUCATION

The Teachers' Resource Unit (TRU) in collaboration with the Regional Pedagogic Inspectorates and the Subject Teachers' Association (STA)	Subject Code 0795	Paper Number 1
CANDIDATE NAME CANDIDATE NUMBER CENTRE NUMBER	Subject Title COMPUTER SCIENCE	
ADVANCED LEVEL	DATE Friday, 22/03/2024	

Time Allowed: One hour thirty minutes

INSTRUCTIONS TO CANDIDATES:

1. USE A SOFT HB PENCIL THROUGHOUT THIS 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, Paper 1".
4. Insert the information required in the spaces provided above.
5. Without opening the booklet, pull out the answer sheet carefully from inside the front cover of this booklet. 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 instructions.
6. Insert the information required in the spaces provided on the answer sheet using your HB pencil:

Candidate Name, Centre Number, Candidate Number, Subject Code Number and Paper Number.

How to answer questions in this examination:

7. Answer ALL the 50 questions in this examination. All questions carry equal marks.
8. Non-programmable calculators are allowed.
9. For each question there are four suggested answers, A, B, C, and D. Decide which answer is correct. 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)

10. Mark only one answer for each question. If you mark more than one answer, you will score zero for that question. If you change your mind about an answer, erase the first mark carefully, and then mark your new answer.
11. Avoid spending much time on any question. If you find a question difficult, move to the next question. You can come back to this question later.
12. Do all rough work in this booklet using, where necessary, the blank spaces in the question booklet.
13. Mobile phones are **NOT ALLOWED** in the examination room.
14. You must not take this booklet and answer sheet out of the examination room. All question booklets and answer sheets will be collected at the end of the examination

1. Given today's technology and his immediate access to resources all over the world, Teke says he is a citizen of the world, not just a Cameroonian. We agree with him because:
 - A. his computing skills are useful all over the world
 - B. he accesses facilities all over the world, as would one living in those countries
 - C. his computing skills give him the same right as citizens in other countries
 - D. his computing skills give him extra advantage over ordinary citizens of the world

2. The register that keeps track of program instructions during execution is a(n):
 - A. accumulator
 - B. address register
 - C. data register
 - D. program counter

3. The minimum number of bits required to address a memory of size 2M by 32 is:
 - A. 5
 - B. 64
 - C. 8
 - D. 21

4. In this classification, each instruction is executed using its own data independently of how other instructions get their data. We are using a(n):
 - A. multiple instruction multiple data
 - B. multiple instruction single data
 - C. single instruction single data
 - D. single instruction multiple data

5. What is R in the following circuit diagram?

 - A. $A \cdot B + \overline{A} + \overline{B}$
 - B. $\overline{A} \cdot \overline{B} \cdot A + B$
 - C. $\overline{A} + \overline{B} + \overline{A} \cdot B$
 - D. $\overline{A \cdot B} + \overline{A} \cdot \overline{B}$

6. A word processor uses the standard ASCII character set to encode characters. The word processor is used to produce a document with 10,000 characters. Which of the following is the exact size of the document on disk?
 - A. 8.75KB
 - B. 8.54KB
 - C. 9.77KB
 - D. 10KB

7. If the capacity of a disc is 25GB, how many CDs can be used to store this quantity given that one CD has a capacity of 700MB?
 - A. 36.57
 - B. 36
 - C. 37
 - D. 36.71

8. Parallelism that results from overlapping the execution of the steps of successive instructions is known as:
 - A. multiprocessing
 - B. vector processing
 - C. scalar processing
 - D. pipeline processing

9. A RISC instruction set has 45 instructions. If each instruction in the set is 32 bits long, what is the minimum number of bits that can be used to represent the Opcode for each instruction?
 - A. 24 bits
 - B. 8 bits
 - C. 6 bits
 - D. 5 bits

10. The 8-bit two's complement representation of the denary number -33 is:
 - A. 1101 1111
 - B. 1011 0011
 - C. 1101 1110
 - D. 1010 0001

11. The turnaround time of user's job is the:
 - A. time since its submission till the time its results are available
 - B. time duration for which the CPU is allotted to the job
 - C. total time taken to execute the job
 - D. time taken for the job to move from assembly phase to completion phase

12. If data is processed as it arrives, this type of processing is called:
 - A. real time processing
 - B. batch processing
 - C. distributed processing
 - D. transaction processing

13. A CPU scheduling algorithm determines an order for the execution of its scheduled processes. Given k processes to be scheduled in one processor, how many different possible ways can these processes be scheduled?
 - A. $k!$
 - B. $(k-1)!$
 - C. $k!/(k-1)!$
 - D. $k(k-1)/2$

14. In memory management strategies, the LRU algorithm:
- swaps out pages that have been used recently
 - swaps out pages that have not been used recently
 - swaps out pages that have not been used often lately
 - swaps out pages that have been used often lately
-
15. The extent to which software can continue to operate correctly despite the introduction of invalid input is called:
- reliability
 - compatibility
 - robustness
 - fault tolerance
-
16. With respect to software life cycle, documentation is prepared at:
- every stage of the SDLC
 - the system design stage
 - the system analysis stage
 - the development stage
-
17. Programs which are treated as hardware and stored in ROM are called:
- utilities
 - bespoke
 - firmware
 - middleware
-
18. Its software directly controls the hardware components in order to carry out tasks they are designed for, but essentially, it acts as a computer and is seen as such. It is a(n):
- monitoring system
 - embedded system
 - automated system
 - control system
-
19. Processes that are in main memory and are ready and waiting to execute are kept on a list called a(n):
- job queue
 - process queue
 - ready queue
 - execution queue
-
20. Which of the following OSI layers has main function as data formats, data encryption and decryption, data compression and decompression?
- Network layer
 - Transport layer
 - Session layer
 - Presentation layer
-
21. In SDLC, the collection of information by means of interviews, questionnaires, observation and inspection of documents is the activity of:
- system analysis
 - system design
 - system investigation
 - data collection
-
22. Prototype refinement is:
- giving a prototype enough functionality such that it becomes the final product
 - improving a prototype's functionality so that it is closer to the final product
 - eliminating errors from a conceptual model
 - developing a logical model from a conceptual model
-
23. The number of connections in a full mesh topology that has n devices is given by:
- $n*(n-1)/2$
 - $(n+1)(n-2)/2$
 - $n*(n+1)/2$
 - $(n-1)(n-2)/2$
-
24. Viruses are an issue of network:
- reliability.
 - feasibility
 - security
 - performance
-
25. Which of the following information systems replicates the decision-making process rather than manipulation of information?
- Expert System
 - Management Reporting System
 - Decision Support System
 - Knowledge Management System
-
26. A changeover method in which the new system is put in place incrementally is called:
- parallel changeover
 - direct changeover
 - phase changeover
 - pilot changeover
-
27. Tables in the second normal form (2NF):
- eliminate all hidden dependencies.
 - eliminate the possibility of an insertion anomaly
 - have a composite key
 - have all non-key fields depend on the entire primary key
-
28. In designing a database, which diagram is used to represent real world situation into forms that can be understood by the DBMS.
- structured analysis diagram.
 - entity-relationship diagram
 - data flow diagram
 - design tool diagram
-

29. Referential integrity dictates that:
- A. the value of a primary key must appear in a foreign key of the related table.
 - B. the value of a primary key cannot appear in a foreign key of the related table.
 - C. the value of a foreign key must appear in a primary key of the related table.
 - D. the value of a foreign key cannot appear in a primary key of the related table.
-
30. Fonka has written an SQL statement that retrieves from an exam database, the names of students who have an A grade in any subject. Which of the following SQL keywords would eliminate redundant data from the query result?
- A. DROP
 - B. FILTER
 - C. DELETE
 - D. DISTINCT
-
31. New records are added at the end of a file and data must be read from the beginning, one after the other, in order to find a particular record. This file must be:
- A. a serial file
 - B. a sequential file
 - C. an indexed file
 - D. a direct file
-
32. A driver can drive three types of vehicles and a vehicle can be driven by any qualified driver. The driver-vehicle type relationship is:
- A. N:3
 - B. 3:N
 - C. 1:3
 - D. 3:1
-
33. When the primary key of a relation is a determinant for another attribute, which in turn is a determinant for a third attribute this situation is called:
- A. multi-level dependency
 - B. partial dependency
 - C. transitive dependency
 - D. multi-valued dependency
-
34. Each pass through a loop is a(n):
- A. scan
 - B. iteration
 - C. traversal
 - D. nesting
-
35. One major shortcoming of low-level languages is that:
- A. programs do not run fast enough
 - B. programs do not make system calls
 - C. there are no libraries attached to it
 - D. programs are difficult to develop
-
36. In object-oriented programming, an object is:
- A. one instance of a class
 - B. another word for a class
 - C. a class with a static method
 - D. a method that accesses a class
-
37. A program parameter that can be modified by all subprograms that make reference to it is known as a(n):
- A. local variable
 - B. global variable
 - C. formal parameter
 - D. actual parameter
-
38. If the processor is executing a main program that calls a subroutine, then after executing the main program up to the CALL instruction, control will be transferred to the:
- A. address of the main program
 - B. address of the subroutine
 - C. address of the CALL instruction
 - D. address of the data to be used as operand
-
39. If a node having two sub-trees is deleted from a binary search tree, it is replaced by its:
- A. in-order predecessor
 - B. post-order predecessor
 - C. pre-order successor
 - D. post-order successor
-
40. Which of the following represents the result of a first pass during bubble sort? Assume passes are from left to right, sorting is in ascending order, and the initial data to sort is: 25, 10, 30, 35, 25, 20.
- A. 10, 25, 30, 35, 25, 20
 - B. 10, 25, 30, 25, 20, 35
 - C. 10, 25, 25, 20, 30, 35
 - D. 10, 20, 25, 25, 30, 35
-
41. Programming language (PL) functions are designed to return a value. The value returned by a PL function can be passed to another function or procedure:
- A. as output
 - B. as parameter
 - C. by value
 - D. by reference
-
42. The following are in distinct classes of declarative languages:
- A. object-oriented and logic programs
 - B. applicative and functional programs
 - C. applicative and object-oriented programs
 - D. functional and logic programs
-

43. The space factor when determining the efficiency of an algorithm is measured by counting the:
- maximum memory needed by the algorithm
 - minimum memory needed by the algorithm
 - minimum disk space needed by the algorithm
 - maximum disk space needed by the algorithm
-
44. A full binary tree with $2n + 1$ nodes contains:
- n leaf nodes
 - n non-leaf nodes
 - $n-1$ leaf nodes
 - $n-1$ non-leaf nodes
-
45. Otte misunderstood the notion of computational complexity as:
- how much time a human needs to produce a program
 - how much time a computer needs to execute a program
 - how much space a computer needs to execute a program
 - how many instructions a computer executes for certain type of programs
-
46. The feature of object oriented programming which explicitly helps code reuse is:
- object.
 - class
 - inheritance
 - aggregation
-
47. What is the output of the function `addyx()` below when it is called with the arguments $x = 3$ and $y = 7$?

```

function addyx(x,y)
  if(x = y)then
    return x
  else
    return addyx(x+1,y-1)
  endif
end

```

- 3
 - 4
 - 5
 - 10
-
48. The postfix form of the expressions $(a - b + c)^2$, where $^$ denotes "to the power of", is:
- $a b c 2 - + ^$
 - $a b c - + ^ 2$
 - $a b - c + 2 ^$
 - $a b c - + ^ 2$
-
49. In computer programming, an entity that has state and behavior is known as a(n):
- variable.
 - object.
 - data type.
 - abstract data type.
-

50. A linear collection of data elements where the next element is given by means of a pointer is called:
- primitive data type.
 - composite data type.
 - linked list
 - binary tree
-

STOP. GO BACK AND CHECK YOUR WORK

GOOD LUCK !!!