

BP 2183 MANKON BAMENDA
 TEL 233 362 209
 Email : trubamenda@yahoo.co.uk

P.O. BOX: 2183 MANKON BAMENDA
 TEL 233 362 209
 Email : trubamenda@yahoo.co.uk

A
ATVE

MARCH 2022

The Teachers' Resource Unit and the Regional Inspectorate of Pedagogy, in collaboration with COSTA	SUBJECT CODE NUMBER 0795	PAPER NUMBER 1
GENERAL CERTIFICATE OF EDUCATION AND ADVANCED TECHNICAL AND VOCATIONAL EDUCATION REGIONAL MOCK EXAMINATION	SUBJECT TITLE COMPUTER SCIENCE	
CANDIDATE NAME: CANDIDATE NUMBER: CENTRE NUMBER: ADVANCED LEVEL		

Time Allowed: One and a half hours
INSTRUCTIONS TO CANDIDATES:

Mobile phones are **NOT ALLOWED** in the examination room.

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 code and subject title—Computer Science Paper 1".
4. Insert the information required in the spaces 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. 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.

TURN OVER

- 1 The location of a resource on the internet is given by its
- Protocol
 - URL
 - Website
 - Browser
- 2 What is the number of swaps required to sort n elements using selection sort, in the worst case?
- $O(n)$
 - $O(n \log n)$
 - $O(n^2)$
 - $O(n^2 \log n)$
- 3 Software programs that allow you to legally copy files and give them away at no cost are called
- Free ware
 - Open source
 - Share ware
 - Public domain
- 4 The device which changes from serial transmission to parallel transmission of data.
- Counter
 - Multiplexer
 - Demultiplexer
 - Modem
- 5 In programming, it defines the range of values a variable may take
- Word size
 - Abstraction
 - Band Width
 - Data Type
- 6 The NAND and NOR gates are referred to as universal gates because?
- They are easier to implement
 - They can be used to implement any Boolean function.
 - They are available everywhere in the world
 - They are found in all computer Integrated circuits
- 7 What is the **minimum** number of bits required to address a 32 K memory?
- 10 bits
 - 12 bits
 - 14 bits
 - 16 bits
- 8 2's complement representation of decimal number of -17 by using 8 bit representation is
- 1110 1111
 - 1101 1101
 - 1100 1100
 - 0001 0001
- 9 Technically speaking, what is the most accurate description of a peripheral device?
- A device that is connected to a computer but is not part of the core computer architecture
 - A device that plugs into a computer using a USB connection
 - A device that provides input and output functions for a computer system
 - A device connected to a computer using cables
10. A process in the blocked state is moved to the _____ state when the event for which it has been waiting occurs.
- Running
 - Ready
 - Waiting
 - Terminated
11. Which of the following interrupts will be handled first provided they all occur at the same time?
- Interrupt from Hard Disk
 - Interrupt from Mouse
 - Interrupt from Keyboard
 - Interrupt from CPU temperature sensor
12. The number $25.25 = 1101.01$ in binary, translated into a normalized floating-point number, with a 10-bit mantissa and 6-bit exponent?
- 0110110000 000101
 - 0110110000 000101
 - 0110110100 000101
 - 0110010100 000101
13. Which of the following statements is/are true?
- Shortest remaining time first scheduling may cause starvation
 - Pre-emptive scheduling can cause starvation
 - Round robin is better than FCFS in terms of response time
- I only
 - I and III only
 - II and III only
 - I, II and III
14. A database table is in 2nd Normal form if it is in 1st normal form and
- All non-key fields depend on a unique key
 - All non-key fields depend on all key fields
 - Most non-key fields depend on unique key
 - Most non-key fields depend on all key fields
15. Given the basic ER and relational models, which of the following is **INCORRECT**?
- An attribute of an entity can have more than one value
 - An attribute of an Entity can be composite
 - In a row of a relational table, a primary key uniquely identify each record.
 - In a row of a relational table, an attribute can have exactly one value or a NULL value
16. CPU generally handles an interrupt by executing an interrupt service routine _____
- As soon as an interrupt flag is raised.
 - By checking the interrupt register at the end of the fetch cycle
 - By checking the interrupt register after finishing the execution of the current instruction
 - As soon as the computer stop working
17. How many cables segments will Mr. Jason need to connect ten(10) computers in a full mesh topology
- 10
 - 55
 - 45
 - 40

18. The prefix form of the infix expression $A + B + C \times D$ is

- A. $++ \times ABCD$
- B. $ABCD ++ \times$
- C. $++ AB \times CD$
- D. $AB + CD \times +$

19. A security light comes "ON" only when two switches (A and B) connected to the circuit must be at different state. Which type of logic circuit is it used in the system?

- A. AND
- B. XOR
- C. NOR
- D. OR

20. A network technician configures a mobile phone with IP address and subnet mask 10.0.0.3 and 255.255.255.0 respectively to access the internet. To which class does the IP address belong

- A. Class A
- B. Class B
- C. Class C
- D. Class D

21. _____ is an activity that is applied throughout the software engineering process.

- A. Debugging
- B. Testing
- C. Designing
- D. Software quality assurance

22. Testing of software with actual data and in actual environment is called

- A. Alpha Testing
- B. Beta Testing
- C. Regression Testing
- D. Black box Testing

23. Which of the following are components of the central processing unit (CPU)?

- A. Registers, read only memory and cache
- B. Resisters, read only memory and arithmetic logic unit
- C. Registers, cache and arithmetic logic unit
- D. Registers, BIOS and Arithmetic logic unit

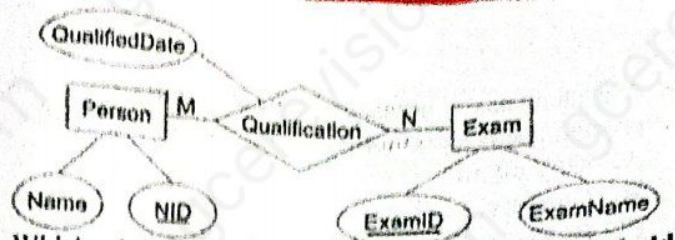
24. Which of these statements about Von Neumann Architecture is true?

- A. Only data is stored in main memory
- B. Only instructions are stored in main memory
- C. Data and instructions are both stored in main memory
- D. Instructions are executed in parallel.

25. Which of these cannot be changed once a program has been stored there?

- A. PROM
- B. RAM
- C. EPROM
- D. EEPROM

26. Consider the following Entity Relationship diagram



Which of the following possible relations will not hold if the ERD is mapped into a relational model?

- A. Person (NID, Name)
- B. Qualification (NID, ExamID, QualifiedDate)
- C. Exam (ExamID, NID, ExamName)
- D. Exam (ExamID, ExamName)

27. In which of the following models does development teams focus on construction rather than design and documentation?

- A. Prototype Model
- B. Spiral Model
- C. Waterfall model
- D. V-Shape model

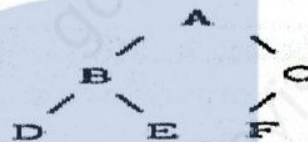
28. A binary tree whose every node has either two child nodes except the leaf is called:

- A. Complete binary tree
- B. Binary search tree
- C. Perfect binary tree
- D. Full Binary tree

29. ER model is used in which phase of Database design?

- A. Conceptual design
- B. Logical design
- C. Physical design
- D. View design

30. The In-Order traversal of the binary tree below is



- A. DEBFCA
- B. DBEAFC
- C. ABDECF
- D. DEFBCA

31. What is the value obtained from evaluating the following postfix expression? $234 * 5 * -$

- A. 58
- B. 14
- C. 60
- D. -58

32. The Octal representation of the hexadecimal code F3A1 is?

- A. 171641
- B. 171651
- C. 176451
- D. 173101

33. A system has 3 processes sharing 4 resources. If each process needs a maximum of 2 resources then, deadlock
- A. May occur
 - B. Can never occur
 - C. Has to occur
 - D. None of the above

34. The instruction, Add R1, #45 does _____
- A. Adds the value of 45 to the address of R1 and stores 45 in the address
 - B. Finds memory location of 45, adds the content to R1
 - C. Adds 45 to the value of R1, stores it in R1
 - D. Adds 45 to the value of R1 and stores it in the Accumulator

35. The addressing mode, where you specify the operand value as part of the instruction
- A. Direct
 - B. Indirect
 - C. Immediate
 - D. Index

36. Mistakes made in the system analyses stage show up in:
- A. System Planning
 - B. Implementation
 - C. System Design
 - D. Maintenance

37. A factor in the selection of a source language is:
- A. Programmer skill
 - B. Language availability
 - C. Program compatibility with other software
 - D. All of the Above

38. Which of the following is NOT a database administrator's function?
- A. Database Design
 - B. Backing up data of specific data users
 - C. Performance monitoring of applications
 - D. Maintaining the network server

39. What is the role of the Program Counter in the Fetch-Execute Cycle?
- A. Stores address of next instruction to be executed
 - B. Stores program code needed by CPU to execute
 - C. Stores the instruction that the CPU will execute
 - D. Stores address of the instruction currently Executed

40. The interval from the time of submission of a process to the time of completion is called?
- A. Throughput
 - B. Execution Time
 - C. Turnaround time
 - D. Completion time

41. The data structure required to evaluate a postfix expression is:
- A. Stack
 - B. Queue
 - C. Tree
 - D. Array

42. In a unidirectional token ring network:

- A. Each node has to 'grab' the token at a designated time and send or receive a message
- B. Messages can be passed round the ring in either direction.
- C. Message tokens can simultaneously be passed around the ring
- D. The message is passed to the correct recipient by a central computer

43. Which of the following devices act in layer three (Network layer) of the OSI reference model?
- A. Bridge
 - B. Hub
 - C. Switch
 - D. Router

44. _____ controls the flow of each character in asynchronous transmission mode.
- A. Parity Bits
 - B. Start-stop bits
 - C. Cyclic redundancy check
 - D. Check-sum bits

45. Which of the following control structures allow code to run at least once before the logical test?
- A. While loop
 - B. For loop
 - C. If-else loop
 - D. Repeat loop

46. A pointer as used in programming
- A. Holds the value of variable
 - B. Holds the address of a variable
 - C. Holds the value and address of a variable
 - D. Is always NULL

47. Which of the following is NOT an Object-Oriented Programming Concept?
- A. Abstraction
 - B. Encapsulation
 - C. Decomposition
 - D. Inheritance

48. When comparing algorithms, the running time $T(n)$ of an algorithm is the running time in the:
- A. Best case
 - B. Base Case
 - C. Worst Case
 - D. Average Case

49. A field amongst group of fields that could possibly uniquely identify records in a table is known as a
- A. Secondary key
 - B. Foreign key
 - C. Primary key
 - D. Candidate key

50. A programming paradigm that packages data and functions into one structure, is known as.
- A. Imperative programming
 - B. Modular programming
 - C. Object Oriented programming
 - D. Functional programming

STOP
GO BACK AND CHECK YOUR WORK