

GENERAL CERTIFICATE OF EDUCATION BOARD
General Certificate of Education Examination

JUNE 2025

ADVANCED LEVEL

Centre Number	
Centre Name	
Candidate Identification Number	
Candidate Name	

Mobile phones and calculators are NOT allowed in the examination room

MULTIPLE CHOICE QUESTION PAPER

Duration: 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 on 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]

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, where necessary, the blank spaces in the question booklet.
11. **At the end of the examination, the invigilator shall collect the answer sheet first and the question booklet after. DO NOT ATTEMPT TO LEAVE THE EXAMINATION HALL WITH IT.**

Turn Over

1. If in each diagram below, circles and boxes are data and instruction streams respectively, with input streams to the left, which diagram is not used to carry out computations on today's machine architectures:

Diagram A

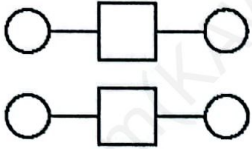


Diagram B

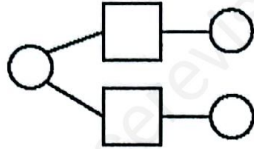


Diagram C

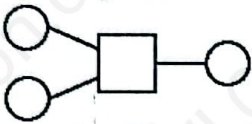
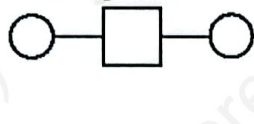


Diagram D



- A Diagram A.
B Diagram B.
C Diagram C.
D Diagram D.

2. Since no machine can start executing without it, it is almost always stored in a

- A ROM.
B RAM.
C Cache Memory.
D Swap Memory.

3. In adding two positive numbers in two's complement arithmetic, the carry bit of the most significant bits (msb) is

- A carried as the new msb of the answer.
B added as the new lsb of the answer.
C carried to the lsb of the answer.
D added to the msb of the answer.

4. The Boolean function $\bar{X}\bar{Y} + XY + X\bar{Y}$ is equivalent to

- A $\bar{X} + \bar{Y}$.
B $X + Y$.
C $X + \bar{Y}$.
D $X + Y$.

5. Which of the following corresponds to the truth table below?

A	B	R
F	F	T
F	T	F
T	F	F
T	T	F

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

6. A non-erasable disk that stores digitise audio information is
A CD.
B CD-ROM.
C DVD-R.
D DVD-ROM.

7. To search large databases across the web, Ngu is best advised to use a

- A multi-tasking computer.
B distributed computer.
C mainframe computer.
D parallel computer.

8. Which of the following is the address generated by the CPU?

- A Physical address.
B Absolute address.
C Page address.
D Logical address.

9. Which best bulk disseminates information to a large number of persons and can hold such information for very long periods?

- A Email system.
B File system.
C Teleconferencing system.
D Library system.

10. A system developed for weather forecasting is best classified as a(n)

- A industrial system.
B commercial system.
C scientific system.
D technical system.

11. It does NOT demonstrate an application of computing in the arts and media

- A computer games.
B computer animation.
C newspaper production.
D book production.

12. Which of the following most critically depends on the use of computer technology?

- A Work from home.
B Hold conference meetings.
C Deliver goods to customers.
D Disseminate information in a town.

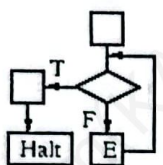
13. In computerising a company, the proposals of my client is based on technically wrong assumptions, from which you will benefit.

- A I simply do the client's bidding.
B I point out and explain the issue
C It is business so I have a lucky deal.
D It is business so he pays extra for advice.

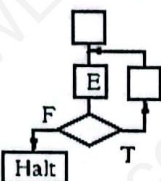
14. Social networking entails that
 A computers network with each other.
 B programs can talk with people.
 C people directly engage with each other.
 D objects on the internet can interact.
-
15. A computer crime was committed because
 A my bank details were posted online.
 B Bi's password was stolen from her diary.
 C Arrey stole Peter's computer.
 D Joe stole from my online bank account.
-
16. In a preemptive priority scheduling algorithm, when a process arrives at the ready queue, its priority is compared with the priority of
 A all processes.
 B currently running process.
 C parent process.
 D initial process.
-
17. They ease software development, and supply new software to meet diverse requirements:
 A user programs.
 B software repositories.
 C link loaders.
 D subroutine libraries.
-
18. The suitable concept for language translators to better reuse program code fragments in the correct order is
 A function-return values.
 B procedure call sequence.
 C procedure call stack.
 D parameter-passing sequence.
-
19. The process gives the meaning of a program so that a targeted machine can execute. It must be
 A code optimisation.
 B code generation.
 C executable code.
 D parameter code.
-
20. When the time quantum in round robin scheduling increases, it leads to a(n)
 A decrease in throughput.
 B increase in response time.
 C decrease in response time.
 D increase throughput.
-
21. One of the following best describes a **Long term scheduler**:
 A increase CPU performance with a given set of instructions.
 B makes the decision of which process to execute next.
 C It handles the swapped out-processes.
 D determines which programs are admitted to the system for processing.
-
22. Which of the following constitutes a basic set of operations for manipulating relational data?
 A Relational algebra.
 B Predicate calculus.
 C Relational calculus.
 D SQL.
-
23. In the _____ there is no non-key dependencies.
 A first normal form.
 B second normal form.
 C third normal form.
 D fourth normal form.
-
24. Whenever two independent one-to-many relationships are mixed in the same relation, a _____ arises.
 A functional dependency
 B multi-valued dependency
 C transitive dependency
 D partial dependency
-
25. For technical and non-technical people to understand how our database system works, use
 A the unified modelling language.
 B entity-relationship modelling.
 C a data modelling language.
 D a data model description.
-
26. Which is best used to make and decide long-term decisions and strategies?
 A Decision Support Systems.
 B Data Communication Systems.
 C Executive Information Systems.
 D Management Information Systems.
-
27. The parity bit is used in serial communication for
 A error detection.
 B error correction.
 C collision detection.
 D synchronisation.
-
28. File transfer, mail services, access and management occurs at _____ Layer.
 A physical
 B network
 C application
 D datalink
-
29. What will be the resulting binary equivalence after subtracting 11011_2 from 10011_2 using 2's complement?
 A 00011.
 B 11001.
 C 01000.
 D 11000.

30. An algorithm initialises a variable and then increments it, via instruction E, for each person in a room. It then prints the variable at the end. Which flowchart below gives the most complete execution of the algorithm?

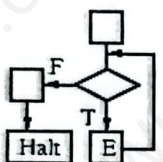
Flowchart A



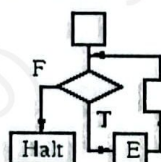
Flowchart B



Flowchart C



Flowchart D



- A Flowchart B.
B Flowchart B.
C Flowchart C.
D Flowchart D.

31. The SQL query: **SELECT ALL FROM c JOIN v USING iD** gives
A the c and v rows that match on iD.
B the c and v rows that match non-null iD.
C all c rows plus v rows that match on iD.
D all v rows plus c rows that match on iD.

32. _____ describes data in a database which technical people are about to implement.
A A conceptual view.
B A physical view.
C A logical model.
D An E-R model.

33. As one of the main programming paradigms, scripting languages are described as follows:
A sequence instructions and track states.
B have internal states and sends messages.
C run code fragments and returns results.
D piece results from code fragments.

34. In order to print the nodes of the tree adjacent in alphabetical order, we traverse itC
A Pre-order.
B Post-order.
C In-order.
D Breadth-first.



35. Assorted properties of an entity are grouped for processing from a long-term storage medium. It is best stored as a(n)
A file record.
B database record.
C data structure record.
D file repository record.

36. What is the result of $42 - 20$ using 2's complement?
A 00010110.
B 00010100.
C 00011010.
D 00011011.

37. What data structure is most likely seen in a non-recursive implementation of a recursive algorithm?
A A stack.
B An array.
C A record.
D A queue.

38. A search technique for randomize item access is
A hash table search.
B linear search.
C binary tree search.
D binary search.

39. In object-oriented programming, an object is
A another word for a class.
B one instance of a class.
C a class with static method.
D a method that accesses a class.

40. Program hval $([-1, 3, 5, 6, 99, 12, 2])$ calls itself on the non-empty tail of its given list, as it tracks the highest value so far. It makes:
A 0 recursive call.
B 1 recursive call.
C 5 recursive calls.
D 7 recursive calls.

41. Testing of software with arbitrary data and in an actual environment is called
A alpha testing.
B beta testing.
C regression testing.
D acceptance testing.

42. Joe and colleagues met and highlighted what might be wrong with a program. They were
A revising the code.
B reviewing the code.
C verifying the code.
D validating the code.

43. When running programs, we cannot always tell whether or not a given program would ever stop its execution. The problem is
- A a stopping problem.
 - B the halting problem.
 - C a hard problem.
 - D the decidability problem.
-
44. Yondo identified the most costly instructions in a program and counted the number of times they were executed. She computed its
- A algorithmic time complexity.
 - B non-deterministic time complexity.
 - C polynomial time complexity.
 - D computational time complexity.
-
45. In first-generation programming, programs were written using
- A coding language.
 - B assembly language.
 - C macro language.
 - D machine language.
-
46. It is used to pass and return values of a procedure or function. It is a
- A function variable.
 - B data type.
 - C function parameter.
 - D variable argument.
-
47. In software development, it is NOT an attempt at software code reuse.
- A Encapsulation.
 - B Software library.
 - C Procedure calls.
 - D Inheritance.
-
48. A programmer's support environment need NOT include a
- A program debugger.
 - B text editor.
 - C program profiler.
 - D text processor.
-
49. What is subroutine nesting?
- A Having multiple subroutines in a program.
 - B Using a linking nest statement to put many subroutines under the same name.
 - C Having one routine call the other.
 - D Having multiple subroutines call using the same name.
-
50. To use a large array of values beyond a given procedure call, we best pass it by/via
- A reference.
 - B value.
 - C file.
 - D I/O.
-

STOP

GO BACK AND CHECK YOUR WORK