

AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS X

ANNUAL EXAMINATIONS (THEORY) 2025

Computer Science Paper I

Time: 1 hour 10 minutes Marks: 40

INSTRUCTIONS

1. Read each question carefully.
2. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
3. There are 100 answer numbers on the answer sheet. Use answer numbers 1 to 40 only.
4. In each question, there are four choices A, B, C, D. Choose ONE. On the answer grid, black out the circle for your choice with a pencil as shown below.

Correct Way	Incorrect Ways
1 (A) (B) ● (D)	1 (A) (B) (C) (D)
	2 (A) (B) (C) (D)
	3 (A) (B) (C) (D)
	4 (A) (B) (C) (D)

Candidate's Signature

5. If you want to change your answer, ERASE the first answer completely with a rubber, before blacking out a new circle.
6. DO NOT write anything in the answer grid. The computer only records what is in the circles.
7. You may use a simple calculator if you wish.

1. Consider the given flowchart symbol.



The given symbol is used to represent the

- A. decision in a flowchart.
 - B. processing in a flowchart.
 - C. input and output in a flowchart.
 - D. starting and ending point in a flowchart.
2. A statement calculates average of five integers.
- A flowchart symbol that must have this statement is
- A. input.
 - B. output.
 - C. process.
 - D. decision.
3. A stage of problem solving in which a person investigates the problem and gathers as much information as possible is referred as
- A. defining the problem.
 - B. analysing the problem.
 - C. planning the solution of the problem.
 - D. finding the candid solutions of the problem.
4. Consider the given algorithm.

```
Step 1: Start
Step 2: A=4
Step 3: B=6
Step 4: C=A%B
Step 5: A=C+B
Step 6: B=B-2
Step 7: IF B≥1 THEN GOTO Step 4
Step 8: Output A
Step 9: Stop
```

The output of this algorithm is

- A. 1
- B. 2
- C. 3
- D. 4

5. Consider the given algorithm.

Step 1: Start
Step 2: Let the number J be 6 and K be 3
Step 3: Initialize L=2 and M=1
Step 4: $L=L*J+K$
Step 5: $M=M+4$
Step 6: If $M \leq K$ Then GOTO Step 4 otherwise GOTO Step 7
Step 7: Output L
Step 8: Stop

The output of this algorithm is

- A. 1
B. 5
C. 15
D. 93
6. Maha works as a customer representative and has received multiple complaints about delays in product deliveries. After investigating, she realised that the warehouse management system is outdated and leading to inefficiencies in order processing and fulfilment.
- What should be the Maha's very next action after knowing about the situation?
- A. Defining the problem
B. Analysing the problem
C. Planning the solutions of the problem
D. Selecting the best solution of the problem
7. If the main function returns integer value but it does not have any arguments, then it is written as
- A. `int main(int)`
B. `int main(void)`
C. `void main(int)`
D. `void main(void)`
8. C++, C# and Java are the examples of
- A. object oriented language.
B. procedural language.
C. assembly language.
D. machine language.

9. Consider the given characteristics.

- I. It is a portable language.
- II. It is executed by microprocessor.
- III. It supports execution of multiple tasks simultaneously.
- IV. It is the only language that is understood by computer.

The characteristics that represent high level language is

- A. I and II.
- B. I and III.
- C. II and IV.
- D. III and IV.

10. Consider the following characteristics.

- I. It clarifies any part of the program.
- II. It is ignored by the compiler.
- III. It makes the code complex.

Which of the following characteristic(s) is/ are TRUE about the comments in a C program?

- A. I only
- B. III only
- C. I and II
- D. II and III

11. The number of bytes in floating point data type is

- A. 1 byte.
- B. 2 bytes.
- C. 4 bytes.
- D. 10 bytes.

12. The appropriate declaration of variable pi in the formula $X = \pi * r^2$ will be

- A. `int pi=3.141;`
- B. `float pi=3.141;`
- C. `short int π =3.141;`
- D. `long float π =3.141;`

13. According to the rules for specifying variable names, the INVALID variable name(s) is/ are

- I. `_Var`
 - II. `1Var`
 - III. `Var_1`
- A. I only.
 - B. II only.
 - C. I and III.
 - D. II and III.

14. Which of the following uses ampersand (&) before the variable name while taking input from the user?

- A. scanf
- B. getch
- C. getche
- D. getchar

15. Consider the given statement.

```
int y = 2 + 3 * 6 / 2;
```

To display the value of variable y, the format specifier that should be used in printf() function is

- A. %d
- B. %c
- C. &d
- D. &c

16. Consider the given C code.

```
int y = 10 % 3 + 7 / 2 + 4 * 3 - 5;
```

The value stored in variable y is

- A. 10
- B. 11
- C. 19
- D. 20

17. Consider the given C language statement.

```
L = (9×5) - (12÷3) × 8^3;
```

With reference to C language, how many operators are INCORRECT in this statement?

- A. One
- B. Two
- C. Three
- D. Four

18. Consider the given statement.

```
K *= J;
```

This statement can be rewritten as

- A. K * J = K;
- B. K = J * J;
- C. K * K = J;
- D. K = K * J;

PLEASE TURN OVER THE PAGE

19. Consider the given program.

```
#include<stdio.h>
int main( )
{
    int k=15;
    k++;
    k--;
    printf("%d", ++k);
    return 0;
}
```

The output of the given program is

- A. 14
 - B. 16
 - C. 18
 - D. 20
20. Consider the given program.

```
#include<stdio.h>
int main( )
{
    int y = 26;
    y += 4;
    y /= 2;
    printf("%d", y *= 4);
    return 0;
}
```

The output of the given program is

- A. 0
 - B. 60
 - C. 120
 - D. 180
21. Consider the given mathematical expression.

$$X^3Y^2 \neq (10-6 \times 8)$$

After converting it into C equivalent expression, the number of relational operator(s) will be

- A. zero.
- B. one.
- C. two.
- D. three.

22. Braces are NOT required in **if-else** statement if
- A. a block of statement is executed.
 - B. a single statement is executed.
 - C. there is no statement after the condition.
 - D. there is a comment after the condition.
23. In switch-case structure, the data type of expression should be
- A. char
 - B. float
 - C. string
 - D. double
24. Consider the given program.

```
#include<stdio.h>
int main( )
{
    int a;
    printf("Enter a number: \t");
    scanf("%d",&a);
    if (a*3 < 9)
        printf("Hello World");
    return 0;
}
```

The input that will give output "Hello World" will be

- A. 0
 - B. 3
 - C. 6
 - D. 9
25. How many types of loops are there in a C programming language?
- A. 5
 - B. 4
 - C. 3
 - D. 2

Use the given program to answer Q. 26 and Q. 27.

```
#include<stdio.h>
int main( )
{
    int i = 15, j = 8;
    do
    {
        printf("Data Science \n");
        while (i-- > j++);
    }
    return 0;
}
```

26. If printf (“Data Science \n”); is replaced by printf (“\n%d”,j); then the output will be

8	12
9	11
10	10
11	9
12	8
A	B
9	12
10	11
11	10
12	9
C	D

27. If we write the same code using while loop, then the difference in number of iteration will

- A. be one more than do-while.
- B. be one less than do-while.
- C. be two less than do-while.
- D. not be changed.

28. In do-while loop structure, if the condition is FALSE at the first iteration, then it will

- A. give syntax error.
- B. will not show the output.
- C. execute the statement once.
- D. execute the statement twice.

29. Consider the following code.

```
#include<stdio.h>
int main( )
{
    int p=3;
    do
    {
        printf("%d ", p*=5);
        p=p+7;
    }
    while (p<=20);
    return 0;
}
```

The given code will display the output

- A. 3
- B. 5
- C. 15
- D. 20

30. Consider the given C program.

```
#include <stdio.h>
int main( )
{
    int a=10, b=7;
    while(a>--b)
    {
        printf("\nKarachi");
        a=a-2;
    }
    return 0;
}
```

The number of times Karachi will be printed upon execution of this program is

- A. zero.
- B. two.
- C. four.
- D. seven.

31. Consider the given C program.

```
#include <stdio.h>
int main()
{
    int i;
    for (i=0;i<10;i++)
    {
        printf("%d ",i);
        i++;
    }
    return 0;
}
```

The output of the given program is

- A. 0 2 4 6 8
 - B. 0 2 4 6 8 9
 - C. 0 1 2 3 4 5 6 7 8
 - D. 0 1 2 3 4 5 6 7 8 9
32. Which of the following logic gates takes the least number of inputs?
- A. OR Gate
 - B. NOT Gate
 - C. AND Gate
 - D. XNOR Gate
33. A logic gate produces 0 in output when both the inputs are same.

Based on the given description, the logic gate is

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

34. Consider the given truth table.

Input		Output
X	Y	Z
0	0	1
0	1	0
1	0	0
1	1	0

The logic gate to which this truth table belongs to is

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

35. Consider the given image of MS Excel.

	W	X	Y	Z
1	Brand	Jan	Feb	Mar
2	Acer	14	22	27
3	Toshiba	23	28	25
4	Dell	52	58	70
5	HP	41	37	55

The MS Excel formula to find the brand with the lowest number of laptops sold in the month of March is

- A. = BOTTOM(Y2:Y5)
- B. = MIN(Z2:Z5)
- C. = LOW(X2:X5)
- D. = MINIMUM(Z2:Z5)

36. In MS Excel, which tab contains the options to protect a worksheet?

- A. View
- B. Insert
- C. Home
- D. Review

37. Use the given excel sheet to answer this question.

	A	B	C	D	E	F	G
1	Student	Test1	Test2	Test3	Test4	Test5	Average
2	Amy	80	80	75	84		80
3	Bob	85	85	88	82		85
4	Cathy	88	88	95	78		87
5	David	87	87	65	90		82
6	Edward	67	67	75	80		72
7	Frank	75	75	95	80		81
8	Ginny	25	45	95	80		61
9	Hank	99	99	78	88		91

Which of the following is the CORRECT formula that should be used to calculate the average test score for Frank?

- A. = AVG (B + C + D + E)
- B. = AVG (B7, C7, D7, E7)
- C. = SUM (B7:E7) / 4
- D. = SUM (B7 – E7) / 4

38. Manal is creating a spreadsheet to collect data from multiple users and she wants to ensure that the entered data meets certain criteria to maintain data integrity.

A tool in spreadsheet applications that allows Manal to restrict the type of data that can be entered into specific cells is

- A. data validation.
- B. unlocking cells.
- C. conditional formatting.
- D. protecting a worksheet.

39. Which of the following authentication methodologies is depicted in the given picture?



- A. Personal Identification Number
- B. Username and Password
- C. Access Card
- D. Biometrics

40. The PRIMARY importance of computer security for organisations is to
- A. facilitate seamless communication and collaboration.
 - B. ensure compliance with industry regulations.
 - C. protect sensitive data and information.
 - D. enhance employee productivity.

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