

First Semester FYUGP Degree (Reg/Sup) Examination
November 2025
KU1DSCCAP101 - FOUNDATIONS OF COMPUTERS AND
PROGRAMMING
2024 Admission onwards

Time : 1.5 hours

Maximum Marks : 50

Section A

Answer any 6 questions. Each carry 2 marks.

1. List the main components of the Central Processing Unit (CPU).
2. What are input devices? Mention and explain any two input devices
3. What is an algorithm? Explain with an example.
4. Write a simple pseudocode to find the sum of first N natural numbers
5. Represent the following decimal numbers in signed 2's complement 8-bit numbers:
i) +43
ii) -19
6. Draw the notation and truth tables for AND, OR
7. Write the syntax of if else
8. Write a short note on ID array declaration and array initialization

Section B

Answer any 4 questions. Each carry 6 marks.

9. Explain signed representation. Represent +51 and -51 in 1's complement and 2's complement form.
10. Explain the process of converting a signed decimal number to its binary representation using 2's complement.
11. Draw the logic circuit for the Boolean expression $AB + \bar{A}B$ using basic gates.
12. Differentiate between **while** and **do while** statements in C. Predict the output of the following code. Justify your answer.

```

int main()
{
    int a = 25;
    while (a <= 27)
    {
        printf("%d ", a);
        a++;
    }
}

```

13. Write a C program to find the sum of all elements in an array.
14. Write the syntax to declare and initialise an integer and character array.

Section C

Answer any 1 questions. Each carry 14 marks.

15. (a) Compare traditional computing systems and AI systems. Explain various types of learning methods and provide real-life applications for each type.
(b) Discuss the different types of memory available in computer system?
16. Explain the importance of variable declaration in C programming. Write a C program that demonstrates the declaration, initialization, and use of various data types and variables, including arrays