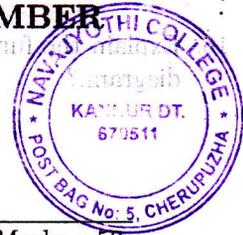


**Third Semester FYUGP Degree Examination NOVEMBER  
2025**

**KU3DSCCAP203// - DIGITAL SYSTEMS &  
INTRODUCTION TO MICROPROCESSORS**

2024 Admission onwards



Time : 1.5 hours

Maximum Marks : 50

**Section A**

**Answer any 6 questions. Each carry 2 marks.**

1. What is assembler?
2. Identify Instruction types and their effects
3. What is the use of code ans stack segments?
4. What is the use of IP in 8086?
5. Apply the associative law to the expression  $A + (B + C + D)$ .
6. Draw the logic gate of full adder
7. What is the octal equivalent of binary number 10111101?
8. What is 1's complement.give example

**Section B**

**Answer any 4 questions. Each carry 6 marks.**

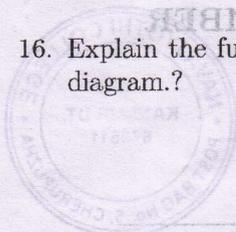
9. Apply De Morgan's theorem to simplify  $(A + BC)'$ .
10. Minimize the SOP form  $F = A'BC + ABC' + AB'C$  using Karnaugh Map (K-map).
11. Discuss representing a function in POS form on a K-map. Represent  $F(A, B, C) = \Pi M(0, 3, 5, 6)$  on a 3-variable map and simplify
12. How does grouping binary digits help in converting to octal or hexadecimal
13. Draw the Circuit diagram for  $(A + B)(C + D)$
14. Define floating point representation with example

**Section C**

**Answer any 1 questions. Each carry 14 marks.**

15. Write an assembly language program to calculate the factorial of a number using a LOOP instruction

16. Explain the function of the Bus Interface Unit (BIU) in 8086 with the help of a diagram.



Maximum Marks : 50

Time : 1.5 hours

Section A

Answer any 6 questions. Each carry 3 marks.

1. What is assembly?
2. Identify instruction types and their effects.
3. What is the use of code and stack segments?
4. What is the use of IP in 8086?
5. Apply the associative law to the expression  $A + (B + C + D)$ .
6. Draw the logic gate of full adder.
7. What is the octal equivalent of binary number 1011101?
8. What is 1's complement give example.

Section B

Answer any 4 questions. Each carry 6 marks.

9. Apply De Morgan's theorem to simplify  $(A + BC)$ .
10. Minimize the SOP form  $F = A'BC + ABC + AB'C$  using Karnaugh Map (K-map).
11. Discuss representing a function in POS form on a K-map. Represent  $F(A, B, C) = \Pi M(0, 3, 5, 6)$  on a 3-variable map and simplify.
12. How does grouping binary digits help in converting to octal or hexadecimal?
13. Draw the Circuit diagram for  $(A + B)(C + D)$ .
14. Define floating point representation with example.

Section C

Answer any 1 questions. Each carry 14 marks.