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.?