

**Third Semester FYUGP Degree (Reg) Examination November
2025**

**KU3DSCLCAP203 - 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 the octal equivalent of binary number 10111101?
2. Convert 110101_2 to octal form
3. List out various string instructions
4. Define assembler directives
5. State De Morgan's second theorem
6. State the rule for group sizes in a K-map and give an example
7. What is the significance of the 16-bit data bus in the 8086 microprocessor.
8. Explain the function of ALE and DEN PIN

Section B

Answer any 4 questions. Each carry 6 marks.

9. Convert the POS expression $(A+B'+C)(A'+B+C)$ into SOP form using algebraic expansion.
10. Simplify $(AB' + A'C)'$ using De Morgan's laws.
11. Minimize the Boolean function $F(A, B, C, D) = \Sigma m(0, 1, 3, 5, 7, 8, 9, 11, 13, 15)$
12. Explain the difference between minimum mode and maximum mode operation of the 8086.?
13. Explain the different addressing modes used in 8086 microprocessor with example
14. Explain the function of segment registers in 8086

Section C

Answer any 1 questions. Each carry 14 marks.

15. Compare BCD and Excess-3 code with an example
16. Explain about instruction set of 8086