

BSc.IT SEM-2 Examination –**Subject : Principles of Digital Electronics****Time : 2.30 Hours****Paper No : 206****Subject Code: 20219****Marks:70**

- Q – 1 1. What is Gate? Explain AND, OR and NOT gate in detail
2. State and Prove Demorgan's Theorem. 07
OR
- Q – 1 1. Implement Circuit and truth table for following Boolean function 07
 $F = [(A'B)' + (B'C)'] + AB'C'$
2. Write a short note on Boolean Algebra 07
- Q – 2 1. Implement circuit : $F(A,B,C) = \sum(0,1,2,3,7)$ 07
2. What is Universal Gate? Explain NAND gate as universal gate. 07
OR
- Q – 2 1. Write a short note on SOP. 07
2. Implement circuit using POS 07
- | X1 | X2 | F |
|----|----|---|
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |
- Q – 3 1. Define : Comparator. Explain with example 07
2. Explain Octal to Binary Encoder in detail 07
OR
- Q – 3 1. Write a short note on Multiplexer 07
2. Write a short note on IC Chip 07
- Q – 4 1. Define Arithmetic circuit. Explain half subtractor in detail 07
2. Write a short note on shifter 07
OR
- Q – 4 1. Explain Binary adder in detail. 07
2. Write a short note on half adder in detail 07
- Q – 5 1. Write a short note on asynchronous counter 07
2. Define : Latch and flip flop. Explain D flip flop in detail 07
OR
- Q – 5 1. Explain JK and T Flip flop. 07
2. What is Shift register? Give its types. Explain any one of them with example. 07