1515114

Roll No. | | | | | | | | | | |

B.E /B.Tech DEGREE EXAMINATION April/May 2014

IT8301 - Computer Organization

Time : 3 Hours | III Semester | Max. Marks: 100

Answer ALL Questions

PART-A **10 x 2 = 20**

1. Define NOR operation with truth table
2. Convert 674 to octal number and binary number
3. NAND gate is Universal –Prove
4. Write the truth table for SR flip flop
5. Write short notes on direct addressing.
6. What is the function of stack pointer?
7. What is the function of control unit?
8. What is a microprogram?
9. Write a short note on: memory address register
10. Write short notes on interrupt

PART-B **5 x 16 = 80**

11. Simplify the following switching functions using Karnaugh map method and realize expression using basic gates 16

$F(A,B,C,D)=\sum(0,5,7,8,9,10,11,15)$

12a. i. Discuss the operation of full subtracter with truth table and derive expression for borrow and difference. Realize using gates. 12

ii. Draw the diagram of 2-1 Multiplexer and describe it is working 4

(OR)

12b. Draw the logic diagram of 4 bit parallel adder using full adder and discuss its operation 16

13a. Discuss in detail about the problems that might be encountered when several devices connected to the same bus. 16

(OR)

13b. Explain with neat sketch the binary division algorithm with an example. 16

14a.	Design a micro programmed control unit for four instruction computer (ADD, SUB, CLA, STO) with neat diagram.	16
	(OR)	
14b.	What is pipelining? How pipelining can be used for control? What is a hazard in pipeline?	16
15a.	What is virtual memory? Explain the concept of paged virtual memory with neat diagram.	16
	(OR)	
15b.	Explain the concept of programmed I/O and memory mapped I/O in detail.	16