



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – COMPUTER SCIENCE

SECOND SEMESTER – APRIL 2013

CS 2505 - COMPUTER ORGANIZATION & ARCHITECTURE

Date: 03/05/2013
Time: 9:00 - 12:00

Dept. No.

Max. : 100 Marks

PART – A

Answer ALL the Questions:

(10 x 2 = 20)

1. Convert $(127543)_8$ to Binary and HexaDecimal.
2. Give the Excitation Table for JK flipflop.
3. What is a Encoder? Give its Uses.
4. Define Register.
5. Give the basic computer instruction formats.
6. Give the components of a control unit.
7. State the purpose of BUN and BSA instruction.
8. Define Control Word.
9. Give the two operations involved in executing a subroutine call instruction.
10. Define PSW.

PART – B

Answer ALL the Questions:

(5 x 8 = 40)

11. a) Design a Full Adder Circuit.
(OR)
b) Discuss about the design of SR and D flipflop.
12. a) Write short note on Multiplexers.
(OR)
b) What is ROM? Draw and explain the Block Diagram of ROM. Also discuss about its types.
13. a) Give the list of computer registers with its sizes and functions.
(OR)
b) Explain the phases in an instruction cycle.
14. a) Discuss about Arithmetic and Logic Unit.
(OR)
b) Define Stack. Give the sequence of micro operations involved in push and pop operation.
15. a) Give the common fields in the instruction format. Also discuss about the types of instructions with examples.
(OR)
b) Draw the block diagram of status register and explain the same.

PART – C

Answer Any TWO Questions:

(2 x 20 = 40)

16. (a) Simplify the following :

(i) $(AB)'(A' + B)(B' + B)$

(ii) $(A + C)(AD + AD') + AC + C$

(iii) $F(A,B,C,D) = \sum(0,1,2,5,8,9,10)$

(iv) $F(a,b,c) = \sum(0,2,6); d(a,b,c) = \sum(1,3,5).$

(b) Define Binary Counter. Explain 4 bit binary counter with parallel load.

17. (a) Discuss about the register reference instructions.

(b) Give the flowchart for computer operation.

18. (a) Write a note on the addressing modes.

(b) Elaborate on the basic types of Data Manipulation instructions.

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