



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.C.A. DEGREE EXAMINATION – COMPUTER APPLICATIONS

SECOND SEMESTER – APRIL 2018

16PCA2MC04- COMPUTER ARCHITECTURE AND MICROPROCESSOR

Date: 23-04-2018
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

PART – A

Answer ALL questions

10 x 2 = 20

1. Convert the following
 - i. $(98.625)_{10} = (\quad)_H$
 - ii. $(45.5)_8 = (\quad)_2$
2. State DeMorgan's law. Give its logic circuit.
3. What are multiplexers? State the use of selection lines of multiplexers.
4. State the features of flipflop.
5. What are the types of address? Give example.
6. Mention the features of RISC.
7. Define microprocessor. Mention any two of its applications.
8. State the use of the pins READY and TEST.
9. What are the uses of CALL and RET instructions?
10. Differentiate MACRO and PROCEDURE.

PART – B

Answer ALL questions

5 x 8 = 40

11. a. Write short note on binary codes.

(OR)
11. b. Write short note on the following
 - i. r's complement and (r-1)'s complement.
 - ii. Error detection with odd parity.
12. a. Explain full adder with neat diagram. Give its truth table.

(OR)
12. b. Explain the operation of clocked RS flip flop. Give its truth table.
13. a. Elucidate the different addressing modes with example.

(OR)
13. b. Illustrate the microoperations of memory reference instructions.

14. a. Explain the block diagram of a micro computer.

(OR)

14. b. Write short note on program development tools.

15. a. Explain shift and rotate instructions with example.

(OR)

15. b. Illustrate MACRO with an example.

PART – C

Answer any TWO questions

2x20 = 40

16.a.Simplify the following using tabulation method

$$F(A,B,C,D) = \Sigma (0,1,4,5,10,11,14,15).$$

16. b. Explain in detail 4 bit register with parallel load.

17. a. Explain the addition and subtraction operations using a flow chart.

17. b. Explain the different registers of 8086.

18. a. Explain any 10 assembler directives. Give example.

18. b. Explain the program development steps.

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