LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.C.A. DEGREE EXAMINATION – COMPUTER APPLICATIONS

SECOND SEMESTER – APRIL 2017

CA 2502- COMPUTER ORGANIZATION AND ARCHITECTURE

Date: 04-05-2017   Dept. No.   Max. : 100 Marks
Time: 01:00-04:00

PART - A

Answer ALL the Questions   **(10 X 2 = 20 Marks)**

1. Define Flip flop.

2. How many variables will be reduced by a quad of adjacent cells in a K-map?

3. Define Encoder.

4. Write the purpose of Multiplexer.

5. Write the purpose of Instruction code

6. List out the Register Reference Instructions.

7. Define Control word.

8. Write the Hardware component of a basic computer.

9. What is Direct Address mode?

10. List any four Shift Instructions.

PART – B

Answer ALL the Questions   **(5 X 8 = 40 Marks)**

11. a) Simplify the following F = A'C+A'B+AB'C+BC

    (OR)

    b) Explain about the SR flip flop.

12. a) Discuss in detail the working of Multiplexer.

(OR)

    b) Write about the Types of ROMs.

13. a) Explain about the I/O Instruction.

        (OR)

    b) Write about the In Interrupt cycle with flowchart.

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14. a) Explain about the control of registers and Memory.

(OR)

b) Describe about the Design of Accumulator.

15. a) Write about the Stack Organization.

(OR)

b) Explain the Types of Interrupt.

PART – C

Answer any TWO Questions   **(2 X 20 = 40 Marks)**

16. a) Simplify the following

(i) $F(x,y,z) = \varepsilon (0,2,4,5,6)$

(ii) $F = X'YZ + X'YZ' + XY'Z' + XY'Z$

b) Discuss about the Binary counters with parallel load.   **(10 marks)**

17. a) Discuss in detail the Common Bus system.   **(10 Marks)**

b) Explain about the Register Reference Instructions.   **(10 Marks)**

18. a) Explain the Data manipulation Instruction with example.   **(10 marks)**

b)Discuss about various addressing modes in detail.   **(10 Marks)**

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