LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **COMPUTER SCIENCE**

FIRST SEMESTER – **NOVEMBER 2019**

16/17/18UCS1MC02 – COMPUTER ORGANIZATION AND ARCHITECTURE

Date: 01-11-2019   Dept. No.   Max. : 100 Marks
Time: 09:00-12:00

Section – A

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

1) Draw the logic diagram and truth table NAND gate.

2) Write the equations for Half Adder and their truth table

3) What is called Decoder?

4) What is called Binary counter?

5) What is called Instruction code?

6) What is effective address?

7) What is the use of IEN flip flop?

8) What are the fields involved in the instruction format?

9) What is called control word?

10) Write any four two address instructions.

Section – B

Answer any **FIVE** questions   **(5 * 8 = 40 Marks)**

11 i) Find the Sum of Products using K-map of Boolean function F(A, B,C, D) =   (0,1,2,5,8,9,10)

   (OR)

  ii) Explain the block diagram of Digital Computer with a neat diagram.

12 i) What is called Shift Register? How the bidirectional register with parallel load.

   (OR)

  ii) Explain in detail about the encoder with an example.

13) i) Discuss the various types of registers used in Basic computer

(OR)

  ii) With an example, explain about the Direct and Indirect addressing.

14) i) Discuss about memory reference instructions along with their micro operations.

(OR)

  ii) Explain the Interrupt cycle with neat flow chart.

15) i) Explain the three different types of CPU organizations.

(OR)

  ii) Explain about Arithmetic Instructions.

Section - C

Answer any **TWO** questions   **(2 * 20 = 40 Marks)**

16) i) Explain in detail about the Full adder circuit with a neat diagram

  ii) Explain in detail about the working of Multiplexer.

17) i) How the control unit is designed in micro computer?

  ii) Explain in detail about the various phases involved in Instruction cycle with a neat flowchart.

18) i) Discuss in detail about the Addressing modes with an example

  ii) What is Flip flop? Explain the working of JK Flip flop.

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