

**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**



**B.C.A. DEGREE EXAMINATION – COMPUTER APPLICATIONS**

**SECOND SEMESTER – APRIL 2016**

**CA 2505 – DIGITAL LOGIC FUNDAMENTALS**

Date: 23-04-2016

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

**PART - A**

**Answer ALL the Questions**

**(10 x 2 = 20 Marks)**

1. Convert 153 to Octal.
2. Define Truth Table.
3. What is Half Adder?
4. Write the purpose of Demultiplexer.
5. Define Flip Flop.
6. What are counters?
7. Write the use of Instruction code.
8. What is common bus system?
9. Define Instruction Cycle.
10. Write down the use of LDA instruction.

**PART - B**

**Answer ALL the Questions**

**(5 x 8 = 40 Marks)**

11. a) Convert the following
  - (i) Decimal 41.6875 in to binary
  - (ii) Octal 736.4 in to decimal.(OR)
  - b) (i) Subtract  $72532 - 13250$  (using compliment)
  - (ii) find the 9's compliment of 546700.
12. a) Discuss in detail about full adder.  
(OR)
  - b) Write about the Types of ROMs.
13. a) Explain about the RS flip flop  
(OR)
  - b) Discuss about the Binary counter.
14. a) Explain about the Stored program organization  
(OR)
  - b) Write notes on computer registers.
15. a) Explain about the Timing and control.  
(OR)
  - b) Explain about the Memory Reference Instructions

**PART - C**

**Answer any TWO Questions**

**(2 x 20 = 40 Marks)**

16. a) Simplify the following using K-map and draw the logic circuit.  
(i)  $F(A,B,C,D) = \Sigma (0,1,2,4,5,8,9,10)$  (5 marks)  
(ii)  $F(X, Y, Z) = \Sigma (2,3,4,5)$  (5 marks)  
b) Discuss about the logic diagram and truth table of 4 to 1 line multiplexer. (10 marks)
17. a) Discuss in detail the JK flip flop. (10 Marks)  
b) Explain about the common bus system. (10 Marks)
18. a) Discuss about various addressing modes in detail. (10 Marks)  
b) Write the about the various instruction formats. (10 Marks)

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