LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

SECOND SEMESTER – **APRIL 2015**

CS 2505 - COMPUTER ORGANIZATION & ARCHITECTURE

Date : 17/04/2015 Dept. No. Max. : 100 Marks
Time : 01:00-04:00

SECTION A

ANSWER ALL THE QUESTIONS **10 X 2 = 20**

1. Convert $(0.6875)_{10}$ to Binary.
2. What is a D flip flop?
3. What is the purpose of Load input in registers?
4. Define Encoder.
5. List down the various registers of a Basic Computer.
6. Define Instruction Code and Operation Code.
7. List any four Register Reference Instructions.
8. What is the purpose of BSA – Branch and Save Return Address Instruction?.
9. What is Relative Address Mode?
10. List out various Status Bit Conditions.

SECTION B

ANSWER ALL THE QUESTIONS **5 X 8 = 40**

11.a. Explain Full Adder with a neat diagram.

(OR)

b. Simplify the Following:

i. ABC+A'B+ABC'

ii. xyz + x'y + xyz.'

12. a. Explain about Multiplexers in detail.

(OR)

b. Discuss on Shift Registers with a neat diagram.

13. a. Explain how registers and memory are interconnected by a common bus system.

(OR)

b. Discuss on various Computer Instructions.

14. a. Explain the way how Interrupt is handled by the computer.

(OR)

b. Briefly explain the register transfers during fetch & decode phase.

15. a. Explain about Arithmetic & Shift Instructions.

(OR)

b. Discuss on Conditional Branch Instructions.

SECTION C

ANSWER ANY TWO QUESTIONS **2 X 20 =40**

16. a. Simplify the following.

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

ii. $F(x,y,z) = \sum (2,3,4,5)$

iii. F(x,y,z) = xy+x`z+yz

iv. F(x,y,z) = x`y`z+x`yz+xy`

b. Explain about Decoder in detail.

17 .a. Explain the organization of a control unit with a neat diagram.

b. Briefly describe the design of a basic computer.

18 .a. Explain the general register organization with a neat diagram.

b. Explain about various Instruction Formats.

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