

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc. DEGREE EXAMINATION – COMPUTER SCIENCE

FIRST SEMESTER – NOVEMBER 2017

17/16UCS1MC02 – COMPUTER ORGANIZATION AND ARCHITECTURE

Date: 06-11-2017

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

PART A

ANSWER ALL QUESTIONS

10 X 2 = 20

1. Simplify the following.
(A + C)(AD + AD') + AC + C.
2. What is a Combinational Circuit?
3. Define multiplexer.
4. What is a shift register?
5. Write the various registers of the basic computer.
6. What is the basic format of instruction codes?
7. What is the instruction JNZ stands for?
8. State the use of input output instructions.
9. What are the common fields found in instruction formats?
10. What is a control word?

PART B

ANSWER ALL QUESTIONS

5 X 8 = 40

11. a. Explain about SR flipflops.
(OR)
b. Explain full adder with a neat diagram
12. a. Write about registers with parallel load.
(OR)
b. Discuss on 3 to 8 line decoder with a neat diagram.
13. a. Write about the Computer Instructions.
(OR)
b. Briefly explain about stored program organization.
14. a. Explain about register reference instructions.
(OR)
b. Discuss on interrupt cycle in detail.
15. a. What are various status bit conditions and explain the 8 bit ALU with 4 bit status register with a neat diagram.
(OR)
b. Explain instruction formats with example.

PART C

ANSWER ANY TWO QUESTIONS:

2 X 20 = 40

16. a. Simplify the following using K. map.

i. $F(A,B,C,D) = (7,13,14,15)$. (5 marks)

ii. $F(w, x, y, z) = (2, 3, 12, 13, 14, 15)$. (5 marks)

b. Explain about binary counter with a neat diagram.

17. a. Explain about computer registers.

b. Write about the control unit of a basic computer with a neat diagram.

18. a. Discuss on various addressing modes in detail.

b. Explain about instruction cycle in detail.
