

(4)

7. (a) Draw the logic diagram and explain the working of 2's complement adder - subtractor.
- (b) What is decoder? Explain the working of decoder.

Unit-IV

8. Write short note on the following :
- (i) LCD display device.
- (ii) Magnetic Tape.
- (iii) I/O devices.
9. (a) What is linear selected memory organization? Explain in brief.
- (b) Explain the working of ALU.

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B.Sc. (Part II) Examination, 2015

(Old Syllabus)

Computer Science

Second Paper

(Computer Organization & Architecture)

Time Allowed : Three Hours] [Maximum Marks : 50

Note : Answer five questions in all. Question No. 1 is compulsory. Attempt One question from each Unit.

1. (a) What do you mean by gate? Explain XOR gate with logic diagram.
- (b) What do you mean by edge triggered flip-flop?
- (c) What do you mean by max term and minterm?

(2)

- (d) Draw the logic diagram of RS flip-flop.
- (e) Explain the working of shift left register.
- (f) What do you mean by flip-flops? How many kinds of flip-flops?
- (g) Draw the logic diagram of ring counter and explain its working.
- (h) What do you mean by fan-in and fan-out?
- (i) What do you mean by multi-vibrators?
- (j) Draw the logic diagram of the following Boolean expression -
$$(A+B+C).(A'+B'+C).(A+B+C')$$

Unit-I

2. Solve the following :

- (i) $ABC_{16} = ?_8$
- (ii) $346_8 = ?_2$
- (iii) $34_{10} = ?_2$
- (iv) 10111×11111
- (v) $1101-111$

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(3)

- 3. (a) Prove that NAND and NOR gate is an Universal Gate.
- (b) Explain RTL with circuit diagram.

Unit-II

- 4. (a) Solve the following using K-Map Method.
 - (i) $F(A, B, C, D) = \sum m(0,6,7,8,9,10,12,13,14,15)$
 - (ii) $F(A, B, C, D) = \pi M(1,3,4,6,7,8,10,12,13,15)$
- (B) Draw the logic diagram of JK flip-flops, and explain its working with the help of timing diagram.
- 5. Write short notes on the following :
 - (i) Schmitt trigger.
 - (ii) 8421 code
 - (iii) Gray code.

Unit-III

- 6. (a) Draw the circuit diagram of the full adder and explain its working.
- (b) What do you mean by counter? Draw the logic diagram of the ripple counter and explain its working.

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P.T.O.