



## SECTION-B

2. Solve the following Boolean functions by using K-Map.

$$F = (w,x,y,z) = \Sigma (0,1,4,5,6,8,9,10,12,13,14).$$

3. Explain half adder and full adder in detail.
4. Explain the working of Master Slave JK Flip Flop.
5. Compare RISC and CISC architecture.
6. Implement the given function using decoder logic
  - a)  $F1 = \Sigma m(0,5,7)$
  - b)  $F2 = \Sigma m(1,2,3,4)$
  - c)  $F3 = \Sigma m(1,6,7)$ .

## SECTION-C

7. Design a 32to 1 Multiplexer using 4 to 1 Multiplexer and explain its working.
8. A computer uses a memory unit with 256K words of 32 bits each. A binary instruction code is stored ill one word of memory. The instruction has four parts: an indirect bit, an operation Code part, a register code part to specify one of 64 registers, and an address part.
  - a) How many bits are there in operation code, the register code part and an address part?
  - b) Draw the instruction word format and indicate the number of bits in each part.
  - c) How many bits are there in the data and address inputs of memory?
9. Discuss various types of Logic Gates. Also, discuss their applications.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**