

VCD- 6/10/2017

F.Y.B.S.C (I.T.) -DC - SEM-I - MRK-75 - HRS-2^{1/2}

- Note: 1. All questions are compulsory.
2. Figure should be neat and labeled.
3. Write side indicates full marks.

Q.1 Attempt any 2 from the following.

(10 Marks)

1. Solve the following.
 - I. $(1434)_8 = (?)_2$
 - II. $(100010101111)_2 = (?)_8$
2. Solve the following.
 - I. $(111001)_2 * (101)_2 = (?)_2$
 - II. $(111010)_2 / (1001)_2 = (?)_2$
3. Represent the following number in signed magnitude, BCD, Excess-3, Gray code.
 - I. $(253)_{10}$
 - II. $(345)_{10}$
4. Solve the following using 2's complement method.
 - I. $(4 - 8)_{10}$

Q.2 Attempt any 2 from the following.

(10 Marks)

1. Write short note on XOR gate.
2. Explain De'Morgans 2nd law.
3. Write short note on basic Gates.
4. Realize the equation; draw the K-Map & circuit diagram by using SOP method.

$$F(A,B,C,D) = \sum m (0,1,2,7,8,10,12,14,15)$$

Q.3 Attempt any 2 from the following.

(10 Marks)

1. Write short note on full Subtractor.
2. Explain encoder.
3. Write short note on half Adder.
4. Draw 16:1 multiplexer for the following.

$$Y = \sum m (1, 2, 4, 6, 8, 9, 10, 12, 13)$$

(10 Marks)

Q.4 Attempt any 2 from the following.

1. Write short note on D-type and T-type Flip-Flop.
2. Write short note on Binary to Gray Code Converter.
3. Write short note on Shift Registers.
4. Explain S-R Flip-Flop.

(10 Marks)

Q.5 Attempt any 2 from the following.

1. Write short note on Cache Memory.
2. Write short note on Memory.
3. Write short note on Hard Disk.
4. Write short note on Basic Organization of Computers.

(10 Marks)

Q.6 Attempt any 2 from the following.

1. Write short note on Real Time Operating System.
2. Write short note on Windows Operating System.
3. Write short note on Linux os.
4. Write short note on Multitasking Operating System.

(15 Marks)

Q.7 Attempt any 3 from the following.

1. Solve the following by using BCD, Excess-3, and Gray code.
 - I. $(123)_{10}$
 - II. $(457)_{10}$
2. Write short note on basic gates.
3. Write short note on Counters.
4. Explain J-K Flip-Flop.
5. Write short note on optical Disk.
6. Write short note on I/O Devices.