

## Digital Computer Electronics - 2009

**Note-** The paper consist of three section. Attempt all questions from each section, internal choice is given.

### Section - A

1. Choose the correct answer-
  - (i) The number of bit in ASCII code is -  
(a) 7                      (b) 8                      (c) 4                      (d) 16
  - (ii) The number of flip flops needed for a Mod 7 counter are -  
(a) 7                      (b) 5                      (c) 3                      (d) 1
  - (iii) The density of dynamic RAM is -  
(a) The same as static RAM  
(b) Less than that of static RAM  
(c) More than that of static RAM  
(d) Either equal or less than that of static RAM
  - (iv) Which method is efficient for data transfer scheme -  
(a) Programmed I/O                      (b) Interrupt driven I/O  
(c) Direct memory access                      (d) None of above
  - (v) The Five flags in 8085 are designated as -  
(a) Z, CY, S, P and AC                      (b) D, Z, S, P, AC  
(c) Z, C, S, P, AC                      (d) Z, CY, S, D, AC

### Section - B : (Short Answer Type Questions)

2. ✓ If  $A = -24$  and  $B = +16$  then find  $A + B$  using '2's complement representation.

OR Write main feature of excess-3 code.

3. ✓ Draw the logic circuit for Boolean equation

$$Y = AB + AC + BD + CD$$

OR ✓ Draw the half adder circuit using NAND gate only.

4. ✓ Write down different type of secondary memory.

OR Write the principle of locality of reference.

5. Define the structure of Bus.

OR Define register indirect addressing.

6. What is DMA?

OR ✓ Write difference between synchronous and asynchronous data transfer.

### Section - C : (Long Answer Type Questions)

7. Convert following decimal number to excess 3 code -

(a) 14                      (b) 32                      (c) 46                      (d) 430

OR ✓ What is the advantage of Gray Code over binary?

8. ✓ Write down the application of flip-flops.

OR Write down the characteristics of combinational logic circuit.

9. What are the advantage and disadvantage of using a variable length instruction format?

OR Write two instruction in each of the following categories -

(a) Data transfer instruction

(b) Data manipulation instruction

10. Define the term track, cylinder and sector..

OR Write down the difference between primary and secondary memory.

11. Write down the role of processor in Interrupt driven I/O.

OR What are the different technique for transferring data between processor and I/O module?

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