Subject : Digital Computer Design & Computer Organization

Day : Monday   **S.D.E.** ||||||||||||||||||||| Time : 02.00 PM TO 05.00 PM
Date : 05/12/2016   **33263**   Max Marks : 80   Total Pages : 1

N.B.:

1) Attempt **ANY FIVE** questions from Section – I and attempt **ANY TWO** questions from Section – II.
2) Answers to both the sections should be written in the **SAME** answer book.
3) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 Explain 4 to 1 line Multiplexer using circuit diagram and truth table. **[10]**

Q.2 Discuss the interrupt cycle with the help of flow chart. **[10]**

Q.3 Discuss various types of flip flops with their merits and demerits. **[10]**

Q.4 Explain different memory reference instructions. **[10]**

Q.5 What is use of subroutines? Explain with example. **[10]**

Q.6 Discuss the functioning of bidirectional shift register with parallel load with the help of circuit diagram. **[10]**

Q.7 Write short notes on **ANY TWO** of the following: **[10]**

   a) Register transfer language

   b) Assembler

   c) Logic gates

SECTION – II

Q.8 **a)** Write an assembly language program to find bigger number from 2 numbers. **[10]**

   b) Illustrate the need of memory organization. **[05]**

Q.9 **a)** Simplify the following using K-map: **[10]**
   i) $F(A, B, C) = \sum (1, 2, 3, 6, 7)$
   ii) $F(A, B, C, D) = \sum (0, 2, 3, 4, 5, 6, 7, 8, 10, 13, 15)$

   b) Using De-Morgan's theorem show that: **[05]**
   $A + A'B + A'B' = 1$.

Q.10 What is sequential circuit? Explain the structure of sequential circuit with the help of appropriate circuit diagram and state table. **[15]**

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1