MID SEMESTER EXAMINATION   MARCH-2012

COE/SW-212 COMPUTER SYSTEM ORGANIZATION

Time: 1 Hour 30 Minutes

Max. Marks : 20

> **Note :**   Answer **ALL** questions.
>   Assume suitable missing data, if any.

1[a] Draw the block diagram and the timing diagram that implements the
   following register transfer / control unit statement: 3

   (i) $D_2T_3 : SC \leftarrow 0$

   (ii) $PQ^1 : R_2 \leftarrow R_1, R_1 \leftarrow R_2$

[b] Write the specification to design a basic computer.   2

2[a] Consider the following lines of code:

   PL 3, ADD ABC I

   Give the computer representation after applying first pass assembler. 3

[b] Differentiate between hardwired and micro programmed control unit. 2

3   What is instruction cycle? Draw the flowchart for instruction cycle.
   Also list various instructions with their equivalent hexadecimal code. 5

4[a] Design the followings with their appropriate function table:

   (i)   4 bit Adder and subtractor

   (ii) 4 bit combinational circuit shifter.   3

[b] Explain an efficient scheme for transferring information between
   registers in a multiple register configuration.   2