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) $PQ' : R_2 \leftarrow R_1, R_1 \leftarrow R_2$

[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