Code No: **R41021** **R10** **Set No. 1**

**IV B.Tech I Semester Supplementary Examinations, Mar/April - 2016**

**COMPUTER ORGANIZATION**

**(Electrical and Electronics Engineering)**

**Time : 3 hours** **Max. Marks: 75**

**Answer any FIVE Questions**

**All Questions carry equal marks**

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1 a) Perform the Arithmetic Operations (+42) + (-13) and (- 42) - (-13) in Binary using signed-2's Complement representation for negative numbers. [8]

b) Describe briefly the Connections between Processor and the Memory with a neat Diagram. [7]

2 a) Represent the following conditional control statement by two register transfer statements with control functions.
If (P=1) then (R1 ← R2) else if (Q=1) then (R1 ← R3) [8]

b) Explain briefly about the Instruction Format of a Basic Computer. [7]

3 a) A computer has 32-bit instructions and 12- bits addresses.
If there are 250 two-address instructions, how many one-address instructions can be formulated? [8]

b) Explain Effective Address. List the Micro Operations performed by
(i) AND to AC (ii) ADD to AC [7]

4 a) What are the design goals for a designer while deciding a Hardwired or Micro programmed Control unit for a CPU? [8]

b) With a block Diagram explain briefly the configuration of a Micro programmed control unit. [7]

5 a) Give a block Diagram for organization of a 2M X 32 Memory module using 512k X 8 Static Memory chips. [8]

b) Write short note on Associative- mapped Cache. [7]

6 a) With a neat Diagram explain the communication link between the Processor and several Peripherals. [8]

b) Explain the concept of Handshaking technique. [7]

7 a) Draw a space-time Diagram for a six-segment pipeline showing the time it takes to process eight tasks. [8]

b) Differentiate between Arithmetic Pipeline and Instruction Pipeline. [7]

8 a) Discuss the difference between tightly coupled Multiprocessors and loosely coupled Multiprocessors from the viewpoint of hardware organization and programming techniques. [8]

b) Write short note on Hypercube Interconnection. [7]