END TERM EXAMINATION

FOURTH SEMESTER [B.TECH] MAY- JUNE 2016

Paper Code: ETCS-204   Subject: **Computer Organization & Architecture**

Time: 3 Hours   **Maximum Marks: 75**

Note: Attempt any five questions including Q.No1 which is compulsory.

Q1 Attempt all:
    (a) Differentiate between Micro-operation and Macro operation. **(5)**
    (b) Differentiate between access time and cycle time of a memory. **(5)**
    (c) Differentiate between Hardwired and Micro Programmed control unit.**(5)**
    (d) Differentiate between Asynchronous Data Transfers and synchronous data transfer. **(5)**
    (e) Differentiate between Unsigned notation and, signed notation. Find range of 2 byte integer in both cases **(5)**

Q2 (a) What is RS 232-C standard? Explain the signals associated with it. **(6)**
    (b) What are the advantages of byte addressing mechanism over word addressing mechanism and what are their disadvantages? **(6.5)**

Q3 Discuss different addressing modes used in computer systems using examples. **(12.5)**

Q4 (a) Explain zero-address, one-address and two-address instructions with examples. **(6)**
    (b) Explain the need of memory hierarchy with the help of a block diagram? What is the reason for not having one large memory unit for storing all information at one place? **(6.5)**

Q5 The 8-bit registers A, B, C & D are loaded with the value $(F2)_H$, $(B9)_H$ and $(EA)_H$ respectively. Determine the register content after the execution of the following sequence of micro-operations sequentially. Where Shl=shift left.shr=shift right and cir=circular. **(12.5)**
    (i) $A \leftarrow A+B$, $C \leftarrow C+shl(d)$
    (ii) $C \leftarrow C+D, B \leftarrow B+1$
    (iii) $A \leftarrow A-C$
    (iv) $A \leftarrow shr(B) \oplus cir(d)$

Q6 (a) Explain 8085 instruction set architecture and its organization in detail. **(6.5)**
    (b) Discuss about Input-Output and Interrupts in detail. **(6)**

Q7 (a) Discuss the procedure to implements a simple CPU. **(6)**
    (b) Starting from an initial value of R=10011101. Determine the sequence of binary values in R after logical shift left, followed by a circular shift-right followed by a logical shift right and a circular shift left. **(6.5)**

Q8 Write short notes on **any two** of the following:- **(6.25x2=12.5)**
    (a) Bus Architecture and Bus Arbitration
    (b) Levels of programming languages
    (c) RS-232-C and RS-422 standard

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