C.U.SHAH UNIVERSITY
Summer Examination-2016

Subject Name : Computer Organization & Architecture

Subject Code : 4TE04COA1   **Branch: B.Tech(CE)**

Semester : 4   **Date : 12/05/2016**   **Time : 02:30 To 05:30**   **Marks : 70**

Instructions:
(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1   **Attempt the following questions:**   **(14)**

a) Full form of RTL is _____   1
a. Register Type Language   b. Real Time Line
c. Register Transfer Language   d. Real Type Line

b) Which of the following is not a shift microoperation?   1
a. shl   b. cil   c. achl   d. ashl

c) 1 KB = _____ Nibbles.   1

d) A.B' + A'.B = _____   1
a. A + B   b. A . B   c. A $\oplus$ B   d. A<<B

e) What is the full form of ALU?   1
a. Arithmetic Logic Unit   b. Addition Language Unit
c. Arithmetic Language Union   d. Asynchronous Logic Unit

f) In 16 bit instruction format, opcode occupies ____ bits.   1
a. 4   b. 3   c. 12   d. 8

g) Which register holds address of instruction?   1
a. PC   b. IR   c. AR   d. DR

h) Full form of CISC is _____   1
a. Common Information Set Computer   b. Complex Information Set Computer
c. Cumulative Instruction Set Computer d. Complex Instruction Set Computer

i) Which of the following is not a branch instruction?   1
a. BSA   b. BUN   c. CLA   d. SPA

j) Divide by zero is a _____ type of interrupt.   1
a. Internal Interrupt   b. External Interrupt
c. Software Interrupt

k) ____is the conversion of a+b+c to Polish Notation.   1
a. ++abc   b. +ab+c   c. ab+c+   d. abc++

l) The amount of processing that can be accomplished during a given interval of   1
time is known as _____
a. output   b. efficiency   c. throughput   d. speedup

m)	What will be the conversion of a^b*c to RPN?	1
	a. ^ab*c b. ab^c* c. abc^* abc*^	
n)	Full form of LDA is _____	1
	a. Load Accumulator b. Late Accumulator	
	c. List Data Accumulator d. Load Data Accumulator	

Attempt any four questions from Q-2 to Q-8

Q-2		**Attempt all questions**	**(14)**
	A	Explain 4-bit arithmetic circuit with diagram and truth table.	**7**
	B	Describe Logic Microoperations for two variables with truth table.	**7**

Q-3		**Attempt all questions**	**(14)**
	A	Explain direct and indirect address with an example.	**7**
	B	Discuss control unit of basic computer with diagram.	**7**

Q-4		**Attempt all questions**	**(14)**
	A	What is instruction cycle? Explain how to determine the type of instruction with flow chart.	**7**
	B	Explain following instructions: BSA, BUN, ISZ	**7**

Q-5		**Attempt all questions**	**(14)**
	A	What is interrupt? Explain Flowchart for interrupt cycle.	**7**
	B	Explain concept of subroutine with an example.	**7**

Q-6		**Attempt all questions**	**(14)**
	A	Explain Four segment CPU pipeline.	**7**
	B	Discuss Booth multiplication algorithm.	**7**

Q-7		**Attempt all questions**	**(14)**
	A	Explain Microprogram sequencer for a control memory.	**7**
	B	Describe general register organization with block diagram.	**7**

Q-8		**Attempt all questions**	**(14)**
	A	Explain stack organization with register stack and memory stack.	**7**
	B	Convert following into Reverse Polish Notation:	**3**
		• A+B-C&D*E/F	
	C	Write RISC characteristics in brief.	**4**