B.Tech. SEM -VI (Computer) 2014 Course (CBCS) : SUMMER - 2019

SUBJECT: COMPUTER ORGANIZATION AND ARCHITECTURE

Day: Wednesday **Time:** 02.30 PM TO 05.30 PM

Date: 29/05/2019 **Max. Marks: 60**

S-2019-2728

N.B:

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Draw neat diagrams **WHEREVER** necessary.

Q.1	**a)**	Draw and explain the structure of Von Neumann machine.	**(05)**
	b)	Explain Power PC architecture.	**(05)**
		OR	
Q.1	**a)**	Explain the single line and multiple bus structure.	**(05)**
	b)	Explain in brief the evolution of computer systems.	**(05)**
Q.2	**a)**	Perform 2's complement multiplication for the following numbers using Booth's algorithm. Multiplicand: 0111 Multiplier 1101	**(05)**
	b)	Write the IEEE standard for single precision floating point number.	**(05)**
		OR	
Q.2	**a)**	Write a short note on non-restoring division.	**(05)**
	b)	What do you mean by fixed point numbers? Explain binary arithmetic using 2's complement?	**(05)**
Q.3	**a)**	Write control sequence for an unconditional branch instruction.	**(05)**
	b)	Write a short note on micro-programmed control unit.	**(05)**
		OR	
Q.3	**a)**	Draw the single bus organization of CPU, Showing all the registers and data paths.	**(05)**
	b)	Write a short note on CPU control unit.	**(05)**
Q.4	**a)**	What are the major functions or requirements for an I/O.	**(05)**
	b)	Explain role of bus controller in multiprocessor systems.	**(05)**
		OR	
Q.4	**a)**	List and explain in short four types of I/O commands that an I/O module may receive when it is addressed by a processor.	**(05)**
	b)	Define synchronous bus in an input operation with timing diagram.	**(05)**
Q.5	**a)**	Explain in short key Characteristics of Computer Memory Systems.	**(05)**
	b)	Explain concept of Virtual memory and explain how virtual address is translated to physical address.	**(05)**
		OR	
Q.5	**a)**	Discuss working of translation mechanism.	**(05)**
	b)	Draw and explain Cache/ Main memory structure.	**(05)**
Q.6	**a)**	Explain Flynn's classification for multiprocessor system.	**(05)**
	b)	Describe virtual processor in detail.	**(05)**
		OR	
Q.6	**a)**	Write short note on Inter Process communication.	**(05)**
	b)	What is the difference is between loosely coupled and tightly coupled configuration.	**(05)**

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