Printed page: 2

Subject Code: ACSBS 0303

Roll No: 2 0 0 1 3 2 1 5 6 0 0 9 2

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

Course: B.Tech **Branch: CSBS**

SEM:III **SESSIONAL EXAMINATION –III** **Year:(2021-2022)**

Computer Organization and Architecture

Time: 1.15 Hours **SET-B** **Max. Marks:30**

General Instructions:

- This Question paper consists of ...2...pages & ...5...questions. It comprises of three Sections, A, B, and C
- Section A -Question No- 1 is objective type questions carrying 1 mark each, Question No- 2 is very short answer type carrying 2 mark each. You are expected to answer them as directed.
- Section B - Question No-3 is Short answer type questions carrying 5 marks each. Attempt any two out of three questions given.
- Section C -Question No. 4 &5are Long answer type (within unit choice) questions carrying 6marks each. Attempt any one part *a* or *b*.

		SECTION – A	[8]	
1.		**All questions are compulsory.**	(4×1=4)	CO
	a.	Control Unit is made up of sequential and combinational circuits to generate the control signals is called as _____.	(1)	CO3
	b.	For horizontal microprogrammed control unit, n control signal requires ____ bit encoding. a) **n** b) **n**-1 c) 2^**n** d)1	(1)	CO3
	c.	For vertical microprogrammed control unit, n control signal requires ____ bit encoding. a) $\log_2$ **n** b) **n**-1 c) 2^**n** d) $\log_2$**n**-1	(1)	CO3
	d.	Pipelining is a process of arrangement of hardware elements of the CPU such that its overall performance is _____. a) decreased b) increased c) Increased or decreased d) None of the above	(1)	CO5

2.	**All questions are compulsory.**		**(2×2=4)**	**CO**
	a.	Write down the main function of control unit.	**(2)**	**CO3**
	b.	Explain RAM and ROM Memory.	**(2)**	**CO4**
		SECTION – B		
3.	**Answer any two of the following-**		**[2×5=10]**	**CO**
	a.	Differentiate between horizontal and vertical micro-programming with the help of block diagram.	**(5)**	**CO3**
	b.	Explain SRAM and DRAM with the help of circuit diagram.	**(5)**	**CO4**
	c.	List the characteristics of RISC and CISC with the help of block diagram.	**(5)**	**CO3**
		SECTION – C		
4	**Answer any one of the following-**		**[2×6=12]**	**CO**
	a.	Write short notes on: i) Hardwired control unit ii) Microprogrammed control unit	**(6)**	**CO3**
	b.	What is Pipeline? Explain five stages of the instruction pipelining for RISC processor.	**(6)**	**CO5**
5	**Answer any one of the following-**			
	a.	Write a program to evaluate the arithmetic expression by using Three, and Zero address instruction. **X=(A+B) * (C+D)**	**(6)**	**CO3**
	b.	What is Memory hierarchy? Explain the purpose to construct such memory hierarchy in digital computers.	**(6)**	**CO3**