P P SAVANI UNIVERSITY

First Semester of B.Sc./BCA Examination

January 2023

SSCA1020 Introduction to Computer Organization

7.1.2023, Saturday **Time: 10:00 a.m. To 12:30 p.m.** **Maximum Marks: 60**

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I

			CO	BTL
Q - 1 (a)	What is number system explain in details.	**[04]**	**1**	**1**
Q - 1 (b)	Solve it(Any four)	**[08]**	**2**	**5**
	I. $(167.25)_{10}= (?)_2$			
	II. $(625)_8= (?)_{10}$			
	III. $(110001111101.00010101)_2= (?)_{16}$			
	IV. $(4265)_8$ = 1's & 2's compliment			
	V. Solve it in binary and represent in sign magnitude			
	i. $(-4564)_8$			
	ii. $(4324)_{16}$			
Q - 2 (a)	Explain universal gates with logic diagram and truth table.	**[03]**	**1**	**2**
	OR			
Q - 2 (a)	Identify Basic gates with logic diagram and truth table.	**[03]**	**2**	**2**
Q - 2 (b)	What is sift register? Also explain SISO, SIPO, PISO, and PIPO	**[06]**	**3**	**1**
Q -3 (a)	Write short note(any two)	**[04]**	**3**	**3**
	I. Memory-reference instruction.			
	II. Register reference instructions.			
	III. Input-Output Instruction.			
Q-3(b)	What is Memory reference instructions, explain AND, LDA, STA, ISZ, BSA.	**[05]**	**3**	**2**

SECTION – II

Q - 1 (a)	Solve it through subtraction and addition algorithm.	**[05]**	**2**	**3**
	i. 6-5			
	ii. 7+6			
Q - 1 (b)	What is multiplication booth's algorithm, explain its flow chart.	**[06]**	**1**	**2**
Q - 2 (a)	What is virtual memory in computer?	**[04]**	**2**	**2**
Q - 2 (b)	What is case memory? Explain in details.	**[03]**	**2**	**2,3**
Q - 3 (a)	What are I/O Bus and Interface Modules? Also draw the figure and explain it.	**[04]**	**3**	**2,3**
Q - 3 (b)	Write a short note(Any 2)	**[02]**	**2**	**3**
	i, Programmed I/O.			

	ii. Interrupt- initiated I/O. iii. Direct memory access (DMA).			
Q - 4(a)	Write a short note(Any 2) i. Instruction pointer (IP). ii. Base Pointer (BP). iii. Stack Pointer (SP)	**[02]**	**2**	**3**
Q - 4(b)	What is Flynn's taxonomy? Also describe SISD, SIMD, MISD and MIMD.	**[04]**	**3**	**2,3**

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CO : Course Outcome Number BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create