Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Science

End Sem (Odd) Examination Dec-2018

BC3CO10 Computer Organization

Programme: B.Sc. (CS) Branch/Specialisation: Computer Science

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1	i.	Unit of computer which is capable of performing arithmetic, Logical and data manipulation operations on binary numbers is called (a) CU (b) ALU (c) I/O unit (d) Processing unit	**1**
	ii.	In computers, operating system and utility program are examples of (a) System software (b) Device drivers (c) Application software (d) Customized software	**1**
	iii.	The load instruction is mostly used to designate a transfer from memory to a processor register known as____. (a) Accumulator (b) Instruction Register (c) Program Counter (d) Memory address Register	**1**
	iv.	A group of bits that tell the computer to perform a specific operation is known as____. (a) Register (b) Micro-operation (c) Accumulator (d) Instruction code	**1**
	v.	_____interface is an entity that controls data transfer from external device, main memory and or CPU registers: (a) CPU interface (b) I/O interface (c) Input interface (d) Output interface	**1**
	vi.	The DMA controller has _____ registers (a) 4 (b) 2 (c) 3 (d) 1	**1**

P.T.O.

	vii.	A read only memory which can be written only once using special electronic equipment is (a) EPROM (b) PROM (c) SRAM (d)ROM	**1**
	viii.	_____ is an illusion that the operating system provides to simplify the application's view of memory. (a) Auxiliary memory (b) Primary memory (c) Secondary memory (d) Virtual Memory	**1**
	ix.	The number of address and data lines of 8086_____. (a) 8 and 8 (b) 16 and 16 (c) 20 and 16 (d) 16 and 20	**1**
	x.	The situation wherein the data of operands are not available is called _____. (a) Data hazard (b) Stock (c) Deadlock (d) Structural hazard	**1**
Q.2	i.	What is Computer? Explain different types of Computer	**4**
	ii.	What is System Software? Explain types of System Software	**6**
OR	iii.	Draw and Explain block diagram of digital computer.	**6**
Q.3	i.	Write Short note on following: - (a) Instruction code (b) Operation code	**2**
	ii.	Explain Computer Instruction Format.	**3**
	iii.	Draw and Explain Instruction Cycle.	**5**
OR	iv.	List and explain any five memory reference instructions.	**5**
Q.4	i.	Discuss isolated I/O and memory mapped I/O.	**2**
	ii.	Explain Input-Output Processor.	**3**
	iii.	What is DMA? Draw and Explain the block diagram of a DMA Controller.	**5**
OR	iv.	Explain Asynchronous data transfer in a computer with an example.	**5**
Q.5	i.	What is difference between address space and memory space?	**2**
	ii.	Explain different page replacement policies.	**3**
	iii.	Explain the working of Associative Memory.	**5**
OR	iv.	Explain Memory Hierarchy in computer system.	**5**

Q.6	i.	Draw Pin out diagram of 8086. (any 10-different pin)	**2**
	ii.	Discuss the role of various status flags of 8086.	**3**
	iii.	What are the various register of 8086? Discuss their functions.	**5**
OR	iv.	What is Pipelining? Explain instruction Pipelining.	**5**

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Marking Scheme
BC3CO10 Computer Organization

Q.1	i.	Unit of computer which is capable of performing arithmetic, Logical and data manipulation operations on binary numbers is called (b) ALU	**1**
	ii.	In computers, operating system and utility program are examples of (a) System software	**1**
	iii.	The load instruction is mostly used to designate a transfer from memory to a processor register known as____. (a) Accumulator	**1**
	iv.	A group of bits that tell the computer to perform a specific operation is known as____. (d) Instruction code	**1**
	v.	_____interface is an entity that controls data transfer from external device, main memory and or CPU registers: (b) I/O interface	**1**
	vi.	The DMA controller has _____ registers (c) 3	**1**
	vii.	A read only memory which can be written only once using special electronic equipment is (b) PROM	**1**
	viii.	_____ is an illusion that the operating system provides to simplify the application's view of memory. (d) Virtual Memory	**1**
	ix.	The number of address and data lines of 8086_____. (c) 20 and 16	**1**
	x.	The situation wherein the data of operands are not available is called _____. (a) Data hazard	**1**

Q.2	i.	Definition of Computer	1 mark	**4**
		Any three types of Computer		
		1 mark each (1 mark * 3)	3 marks	
	ii.	Definition of System Software	1 Mark	**6**
		Any Two types of System Software		
		2.5 marks each (2.5 marks * 2)	5 marks	
OR	iii.	Diagram of digital computer	2 marks	**6**
		Explanation of any 4 (1 mark * 4)	4 marks	

Q.3	i.	(a) Definition of Instruction code	1 mark	**2**
		(b) Operation code	1 mark	
	ii.	Three Computer Instruction Format		**3**
		1 mark each (1 mark * 3)	3 marks	
	iii.	Diagram of Instruction Cycle	2 marks	**5**
		Explanation of Instruction Cycle	3 marks	
OR	iv.	Listing of memory reference instructions	1 mark	**5**
		Explanation of memory reference instructions.	4 marks	

Q.4	i.	Isolated I/O	1 mark	**2**
		Memory mapped I/O.	1 mark	
	ii.	Diagram Input-Output Processor	1 mark	**3**
		Explanation of Input Output Processor	2 marks	
	iii.	Definition of DMA	1 mark	**5**
		Diagram of a DMA Controller.	2 marks	
		Explanation of a DMA Controller.	2 marks	
OR	iv.	Definition Asynchronous data transfer	1 mark	**5**
		Diagram Asynchronous data transfer	2 marks	
		Explanation Asynchronous data transfer	2 marks	

Q.5	i.	Difference b/w address space and memory space		**2**
		Any 4 points 0.5 mark for each	(0.5 mark * 4)	
	ii.	Any three page replacement policies		**3**
		Each of 1 mark	(1 mark * 3)	
	iii.	Diagram of Associative Memory	2 marks	**5**
		Working of Associative Memory.	3 marks	
OR	iv.	Diagram of Memory Hierarchy	1 mark	**5**
		Explanation of Associative Memory.		
		1 mark for each part (1 mark * 4)	4 marks	

Q.6	i.	Pin diagram of 8086.		**2**
	ii.	Diagram of flag register	1 mark	**3**
		Explanation of various status flags of 8086	2 marks	
	iii.	List various register of 8086	1 mark	**5**

		Explanation of different register	4 marks	
OR	iv.	Definition of Pipelining	1 mark	**5**
		Diagram of instruction Pipelining.	1 mark	
		Explanation of instruction Pipelining.	3 marks	

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