Total No. of Questions: 6 *Total No. of Printed Pages:2*

Enrollment No.....

Faculty of Engineering

End Sem (Odd) Examination Dec-2018

CA5CO03 Computer Organization & Architecture

Programme: MCA Branch/Specialisation: Computer Application

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. Convert the following binary number to decimal. 01011_2 **1**
(a) 15 (b) 18 (c) 14 (d) 11

ii. Which of the following is the most widely used alphanumeric code for computer input and output? **1**
(a) GRAY (b) ASCII (c) PARITY (d) EBCDIC

iii. Which language is termed as the symbolic depiction used for indicating the series: **1**
(a) Random transfer language
(b) Register transfer language
(c) Arithmetic transfer language
(d) All of these

iv. Which are the operation that a computer performs on data that put in register: **1**
(a) Register transfer (b) Arithmetic
(c) Logical (d) All of these

v. The DMA controller has _____ registers **1**
(a) 4 (b) 2 (c) 3 (d) 1

vi. The technique whereby the DMA controller steals the access cycles of the processor to operate is called **1**
(a) Fast conning (b) Memory Con
(c) Cycle stealing (d) Memory stealing

vii. Which of the following is a 16-bit register? **1**
(a) AL (b) AX (c) AH (d) All of these

P.T.O.

viii. The number of address and data lines of 8086_____ **1**
(a) 8 and 8 (b) 16 and 16 (c) 20 and 16 (d) 16 and 20

ix. SDRAM stands for: **1**
(a) System dynamic random access memory
(b) Synchronous dynamic random access memory
(c) Both (a) and (b)
(d) None of these

x. The memory bus is also referred as_____: **1**
(a) Data bus (b) Address bus
(c) Memory bus (d) All of these

Q.2 i. Convert $(108)_{10}$ into binary, octal, and Hexadecimal. **3**
ii. Draw and explain 16*1 Multiplexer. **7**
OR iii. Define and explain Boolean Variable, Boolean algebra, Boolean expression and logic diagram with example. **7**

Q.3 i. What do you mean by micro operation? Explain giving example. **3**
ii. Draw and explain 4-bits arithmetic circuit **7**
OR iii. What is register transfer? Explain unconditional and conditional transfer giving example of each. **7**

Q.4 i. What do you mean by zero, one and two address instructions? Explain with suitable example. **3**
ii. What do you mean by instruction set of computer? Explain when the instruction set is said to be complete. **7**
OR iii. Explain hardwired implementation of control unit. **7**

Q.5 i. What are the features of 8086? **4**
ii. Draw the block diagram of 8086. Explain in brief. **6**
OR iii. Explain different addressing modes in 8086. **6**

Q.6 Attempt any two:
i. Explain different types of ROM. **5**
ii. Build 256*8 using 128*8 chips. **5**
iii. Explain contemporary memory hierarchy structure. **5**

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Marking Scheme

CA5CO03 Computer Organization & Architecture

Q.1	i.	Convert the following binary number to decimal. 01011_2 (d) 11		**1**
	ii.	Which of the following is the most widely used alphanumeric code for computer input and output? (b) ASCII		**1**
	iii.	Which language is termed as the symbolic depiction used for indicating the series: (b) Register transfer language		**1**
	iv.	Which are the operation that a computer performs on data that put in register: (d) All of these		**1**
	v.	The DMA controller has _____ registers (c) 3		**1**
	vi.	The technique whereby the DMA controller steals the access cycles of the processor to operate is called (c) Cycle stealing		**1**
	vii.	Which of the following is a 16-bit register? (b) AX		**1**
	viii.	The number of address and data lines of 8086_____ (c) 20 and 16		**1**
	ix.	SDRAM stands for: (b) Synchronous dynamic random access memory		**1**
	x.	The memory bus is also referred as_____: (a) Data bus		**1**
Q.2	i.	Convert $(108)_{10}$ into binary	1 mark	**3**
		Octal	1 mark	
		Hexadecimal.	1 mark	
	ii.	Draw16*1 Multiplexer	3 marks	**7**
		Explanation	4 marks	
OR	iii.	Definition	1 mark	**7**
		Boolean algebra	2 marks	
		Boolean expression	2 marks	
		Logic diagram	2 marks	
Q.3	i.	Micro operation	2 marks	**3**
		Example.	1 mark	
	ii.	Draw 4-bits arithmetic circuit	3 marks	**7**
		Explanation	4 marks	
OR	iii.	Register transfer	3.5 marks	**7**
		Unconditional and conditional transfer	3.5 marks	
Q.4	i.	Zero, one and two address instructions with example		**3**
		1 mark for each	(1 mark * 3)	
	ii.	Instruction set of computer	3.5 marks	**7**
		When the instruction set is said to be complete	3.5 marks	
OR	iii.	Hardwired implementation of control unit.		**7**
		Diagram	3.5 marks	
		Explanation	3.5 marks	
Q.5	i.	Features of 8086?		**4**
	ii.	Block diagram of 8086	3 marks	**6**
		Explanation	3 marks	
OR	iii.	Different addressing modes in 8086.	2 marks	**6**
		Explanation	4 marks	
Q.6		Attempt any two:		
	i.	Different types of ROM.		**5**
		Definition	2 marks	
		Explanation of types	3 marks	
	ii.	Build 256*8 using 128*8 chips.		**5**
		Diagram	2 marks	
		Explanation	3 marks	
	iii.	Contemporary memory hierarchy structure.		**5**
		Diagram	2 marks	
		Explanation	3 marks	

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