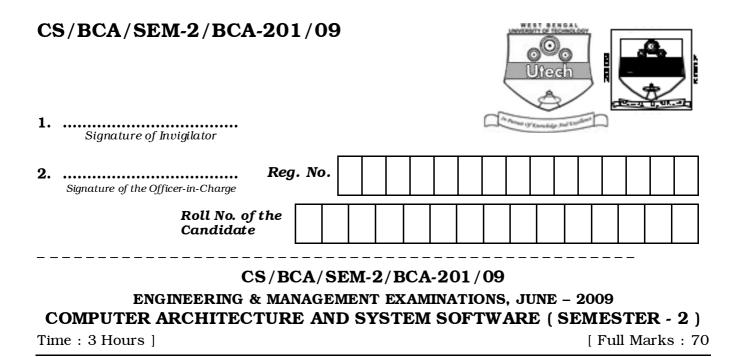
## COMPUTER ARCHITECTURE AND SYSTEM SOFTWARE (SEMESTER - 2)



## **INSTRUCTIONS TO THE CANDIDATES :**

- This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this 1. concerned subject commence from Page No. 3.
- 2 In Group – A, Questions are of Multiple Choice type. You have to write the correct choice in the box a) provided against each question.
  - b) For **Groups – B** & C you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of Group - B are Short answer type. Questions of Group - C are Long answer type. Write on both sides of the paper.
- 3. Fill in your Roll No. in the box provided as in your Admit Card before answering the questions.
- Read the instructions given inside carefully before answering. 4.
- 5. You should not forget to write the corresponding question numbers while answering.
- Do not write your name or put any special mark in the booklet that may disclose your identity, which will 6. render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
- Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall. 7.
- You should return the booklet to the invigilator at the end of the examination and should not take any 8. page of this booklet with you outside the examination hall, which will lead to disqualification.
- 9. Rough work, if necessary is to be done in this booklet only and cross it through.

#### No additional sheets are to be used and no loose paper will be provided

#### FOR OFFICE USE / EVALUATION ONLY Marks Obtain

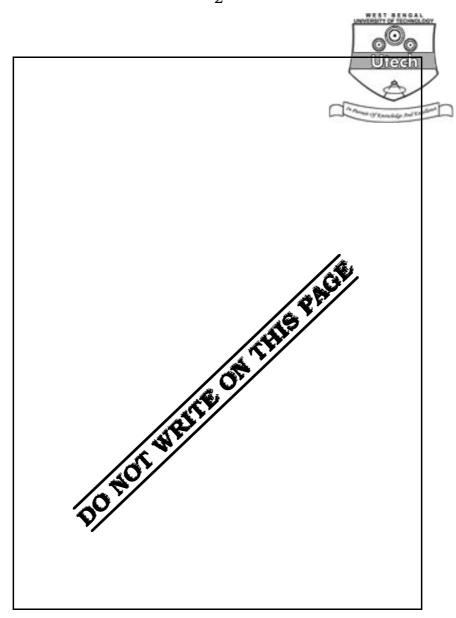
vlar	ks	Obtained	

		Gr	oup	– A			Gro	up –	В	Gro	oup -	- C		
Question Number													Total Marks	Examiner's Signature
Marks													Mui KS	Signature
Obtained														

## Head-Examiner/Co-Ordinator/Scrutineer

2205(03/06)





# 3 ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE - 2009 COMPUTER ARCHITECTURE AND SYSTEM SOFTWARE SEMESTER - 2

Time : 3 Hours ]

## **GROUP – A**

[Full Marks: 70

## ( Multiple Choice Type Questions )

1.	Choo	ose th	e correct alternatives for the foll	owing	:	10 × 1 = 10
	i)	The	instruction LOAD A is a			
		a)	zero address instruction	b)	one address instruction	
		c)	two address instruction	d)	three address instruction.	
	ii)	The	purpose of cache memory in a c	omput	er is to	
		a)	ensure fast booting	b)	reduce load on CPU regis	ters
		c)	replace static memory	d)	speed up memory access.	
	iii)	Obje	ect code is			
		a)	input to assembler	b)	output of assembler	
		c)	intermediate code	d)	none of these.	
	iv)	Whi	ch of the following is not an adv	antage	of Dynamic RAMs ?	
		a)	High density	b)	Low cost	
		c)	High speed	d)	No need of memory refres	h.

2205 ( 03/06 )



/BCA/S	EM-2	/BCA-201/09			
v)	DM	4 A module can communicate with		hrough	
	a)	interrupt	b)	cycle stealing) tech	
	c)	branch instruction	d)	none of these.	
vi)	The	number of fetch operation(s) to	execut	e instruction in immediate moo	le is
	a)	0	b)	1	
	c)	2	d)	none of these.	
vii)	A C	PU has 16 bit program counter(I	PC). Th	is means CPU can address	
	a)	16K	b)	32K	
	c)	64K	d)	256K memory locations.	
viii)	The	major objective in choosing pag	e repla	cement policy is to	
	a)	minimize hit ratio	b)	reduce size of page	
	c)	maximize hit ratio	d)	none of these.	
ix)	The	sum of ( 24D ) $_{16}$ and ( 9 AA ) $_{16}$	<sub>6</sub> is		
	a)	( BE7 ) <sub>16</sub>	b)	( BE6 ) <sub>16</sub>	
	c)	( AF7 ) <sub>16</sub>	d)	( BE7 ) $_{16}$ .	
X)	In a	a stack computer, there is suppo	ort for		
	a)	PUSH and POP instruction on	ly		
	b)	zero address instruction only			
	c)	zero address instructions, PU	SH and	РОР	
	d)	none of these.			

2205 ( 03/06 )

## 5

## GROUP – B

( Short Answer Type Questions )

Answer any *three* of the following.

- 2. Distinguish between Fixed point and Floating point representations.
- 3. Distinguish between vectored and non-vectored interrupt. What is subroutine ? 4 + 1

4. What are the 16-bit registers available in 8085 Microprocessor ? Write about them.

2 + 3

- 5. Why is 'bootstrap loader' program stored in ROM and not in RAM ? 5
- 6. a) What would be happen if a computer does not have any OS installed in it ?
  - b) What are the differences between static memory and dynamic memory ?
  - c) What is flash memory ? 2+2+1

## **GROUP – C**

#### (Long Answer Type Questions)

Answer any <i>three</i> of the following.	3 × 15 = 45
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- 7. a) Explain memory interleaving with diagram.
  - b) Write short note about content addressable memory ( CAM ) with diagram.
  - c) Discuss direct mode and indirect mode of addressing of instruction with examples. 5 + 6 + 4
- 8. a) What is parallel processing ?
  - b) What is arithmetic pipelining ?
  - c) What is vector processing ? Explain how matrix multiplication is performed using vector processing. 6 + 4 + (1 + 4)

2205 ( 03/06 )

5

 $3 \times 5 = 15$ 

- 6
- 9. Draw and explain a 4-bit arithmetic circuit which can perform the following :
  - a) Add
  - b) Add with carry
  - c) Subtract with borrow
  - d) Subtract
  - e) Transfer of A
  - f) Transfer A
  - g) Increment
  - h) Decrement.
- 10 a) What is virtual memory ? What could be the maximum size of virtual memory ? Justify.
  - b) Briefly explain an instruction execution cycle with proper timing diagram.
  - c) Explain the Booth algorithm. Illustrate with an example.
  - d) Briefly discuss different types of ROM.
  - e) Differentiate between static RAM and dynamic RAM. 3 + 3 + 3 + 3 + 3
- 11. Write short notes on any *three* of the following :
  - a) Single-pass assembler
  - b) DMA controller
  - c) Interrupt handling
  - d) Cache memory
  - e) Shift micro-operations.

END

2205 ( 03/06 )





 $3 \times 5 = 15$