KUMARAGURU
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Register Number: ……..

B.E / B.TECH DEGREE EXAMINATIONS: JUNE 2015

(Regulation 2009)

Third Semester

CSE105: COMPUTER ARCHITECTURE

(Common to CSE/IT)

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Program Counter(PC) is also called as
   a) instruction pointer b) memory pointer
   c) data counter d) File pointer
2. A complete set of symbolic names and rules constitute a language which is referred as
   a) Machine language b) Assembly language
   c) High-level language d) Mnemonics language
3. A floating point number that has a O in the MSB of mantissa is said to have
   a) Overflow b) Underflow
   c) Normalized d) Truncated
4. Give the 2's complement for the number 72.
   a) 10110111 b) 01001000
   c) 10111000 d) 10101011
5. A collection of lines that connects several devices is called
   a) bus b) peripheral connection wires
   c) Both a) & b) d) internal wires
6. A situation in which the pipeline is stalled because the data to be operated on are delayed for some reason is called as
   a) Data Hazard b) Structural Hazard
   c) Control Hazard d) Pipelined Hazard
7. Memory management technique in which system stores and retrieves data of fixed length from secondary storage for use in main memory is called
   a) fragmentation b) Swapping
   c) paging d) segmentation

8. The method for updating the main memory as soon as a word is removed from the Cache is called

a) Write-through b) write-back

c) protected write d) cache-write

9. Which of the following interrupt is non maskable?

a) INTR b) RST 7.5

c) TRAP d) RST 6.5.

10. ----------is a high speed parallel bus used in disks and video plays.

a) PCI b) USB

c) ISA d) SCSI

PART B (10 x 2 = 20 Marks)

11. Draw and list the virtues of the single bus structure.
12. What are the difference between Stack and Queue?
13. What are the main features of Booth's algorithm?
14. Write the rules for performing add/subtract operations on floating point numbers.
15. Differentiate Micro programmed control from hardwired control.
16. What are instruction hazards?
17. List the various semiconductors RAMs.
18. What are the enhancements used in the memory management?
19. Define vectored interrupts.
20. What is an asynchronous bus?

PART C (5 x 14 = 70 Marks)

21. a) i) Explain the functional units of a computer with neat diagram. (8)

ii) Discuss briefly the performance issues in computer systems. (6)

(OR)

b) Illustrate the different addressing modes with examples.

22. a) i) Explain the design of Fast Adders with suitable diagrams. (8)

ii) Write a note on IEEE standard for floating point numbers. (6)

(OR)

b) i) Describe the techniques used for speeding up the multiplication operations (8)

ii) Discuss the non-restoring division algorithm with an example. (6)

23.	a)	i)	Explain the multiple bus organization structure with neat diagram.	(6)
		ii)	Describe the micro programmed control unit in detail.	(8)
			(OR)	
	b)	i)	Write a brief note on superscalar operations.	(6)
		ii)	Explain in detail about data hazards.	(8)
24.	a)	i)	Write briefly about semiconductor RAM memories.	(7)
		ii)	Explain the different mapping methods of cache memory.	(7)
			(OR)	
	b)	i)	Write a note on RAID Disk arrays.	(4)
		ii)	What do you mean by virtual memory? Describe the address translation mechanism briefly.	(10)
25.	a)	i)	Describe the data transfer method using DMA.	(7)
		ii)	What are interrupts? How are they handled?	(7)
			(OR)	
	b)	i)	What are the different types of buses? Explain the Asynchronous bus in detail.	(7)
		ii)	Explain the peripheral component interconnect (PCI) bus.	(7)

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