KUMARAGURU
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B.E DEGREE EXAMINATIONS: MAY 2015

(Regulation 2013)

Third Semester

COMPUTER SCIENCE AND ENGINEERING

U13CST302 **:** Computer Architecture

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

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. The access method used for magnetic tape is _____

   a) Direct   b) Random

   c) Sequential   d) Indirect

2. The language that the computer can understand and execute is called _____

3. Actual execution of instructions in a computer takes place in

   a) ALU   b) Control Unit

   c) Storage unit   d) Input unit

4. Half adder consists of_____and_____Gates

5. Subtract $(1010)_2$ from $(1101)_2$ using 1s complement.
   Which of the following is the correct answer?

   a) $(1100)_2$ b) $(0011)2$

   c) $(1001)2$ d) $(0101)2$

6. Status register is also called as _____

7. If the datum is to be written into memory then CPU places it in_____

   a) MAR   b) MDR

   c) MBR   d) MVB

8. Negative numbers are stored in _____

9. _____hold address of word in memory

a)	MAR	b)	MDR
c)	MBR	d)	MVB

10. Write Through technique is used in _____ memory for updating the data.

PART B (10 x 2 = 20 Marks)
(Not more than 40 words)

11. List out the merits of RISC processor.
12. Name different addressing modes.
13. Relate any two advantages of pipelining.
14. Draw the schematic diagram for binary addition-subtraction logic network.
15. Show how a word is fetched from memory.
16. Spell the role of cache memory.
17. What is cycle stealing in DMA?
18. Categorize static RAM from dynamic RAM.
19. Define virtual memory.
20. Recall the requirements for memory management.

PART C (5 x 14 = 70 Marks)
(Not more than 400 words)

Q.No. 21 is Compulsory

21. (i) With a neat diagram elaborate Von-Neumann computer architecture. (7)

    (ii) Recall the operations of a stack. List any three applications of stack. (7)

22. a) With a suitable diagram. Illustrate carry-look ahead addition.

(OR)

    b) Describe the restoring and non restoring division with an example.

23. a) (i) Rephrase the functions of multi bus organization. (10)

       (ii) Criticize hardwired and micro programmed control unit (4)

(OR)

    b) (i) Identify the influence of instruction sets with different modes. (7)

       (ii) Outline the superscalar operation with two execution unit. (7)

24. a) What is an Interrupt? Explicate its types with example.

(OR)

b) Briefly outline the standard I/O interfaces. (i) PCI (7) (ii) SCSI (7)

25. a) (i) Relate the principle of operation of a magnetic disk. (7)

     (ii) How speed, size & cost are considered in memory hierarchy. (7)

(OR)

b) (i) Demonstrate the mapping functions in cache memories. (10)

     (ii) Define Hit rate and Miss Penalty. (4)

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