Daily Practice Problems:
Instructions

Question 1

- Consider a system which supports 2-address and 1-address instructions. The system uses 16 bits instructions and 5-bits addresses. If there are total 32 2-address instructions then maximum how many 1-address instructions can be formulated?

Question 2

- Consider a system which supports 2-address, 1-address and 0-address instructions. The system has ‘i’ bits instructions and ‘a’ bits addresses. If there are ‘x’ 2-address instructions and ‘y’ 1-address instructions then which of the following is correct for maximum number of 0-address instructions supported by system?

(A) $2^i - 2^a x - y$ (B) $2^i - 2^{2a} x - y$

(C) $2^i - 2^{2a} x - y2^a$ (D) $2^i - 2^a x - y2^a$

Question 3

- Consider a system which supports 2-address, 1-address and 0-address instructions. The system has ‘a’ bits instructions and supports 2^m bytes memory. If there are ‘t’ 2-address instructions and ‘w’ 1-address and ‘z’0-address instructions then which of the following expression is correct?

(A) $2^a = 2^m t + w + z$

(B) $2^a = 2^{2m} t + 2^m w + z$

(C) $2^a = 2^{3m} t + 2^{2m} w + 2^m z$

(D) $2^a = 2^{2m} t + 2^m w - z$

Question 4

- Consider a system which supports 3-address, 2-address and 1 -address instructions. It has 32-bit instructions with 8-bits addresses. If there are 254 3-address instructions and 1024 1-address instructions then maximum how many 2-address instructions can be formulated?

Question 5

- Consider a system which supports 2-address, 1-address and 0-address instructions. It has 32-bit instructions with 13-bits addresses. If there are 16376 1-address instructions and 65536 0-address instructions then maximum how many 2-address instructions can be formulated?

Question 6

- An instruction treated as 2-address instruction for first time execution, has been treated as 1-address instruction next time in CPU. Is this scenario possible? Provide reason?

Question 7

- How CPU detects that the current instruction is of what type?

Question 8

- How CPU detects that the current instruction is of what type?

Question 9

- Consider a system which supports 2-address, 1-address and 0-address instructions. The system has 6 bits addresses. If there are 10 2-address instructions, 364 1-address and 1280 0-address instructions then what is the size of instruction supported by system?

Question 10

- Consider a system which supports 2-address and 1-address instructions. The system has 18bits instructions. If there are 7 2-address instructions and 1152 1-address instructions then what is the maximum size of memory supported by system?

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Happy Learning.!