



CS 330 Chapter 12

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| 1. One boundary where the computer designer and the computer programmer can view the same machine is the machine instruction set. | T |
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| 2. The operation to be performed is specified by a binary code known as the operation code. | T |
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| 3. The address of the next instruction to be fetched must be a real address, not a virtual address. | F |
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| 4. It has become common practice to use a symbolic representation of machine instructions. | T |
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| 5. A high-level language expresses operations in a basic form involving the movement of data to or from registers. | F |
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| 6. One of the traditional ways of describing processor architecture is in terms of the number of addresses contained in each instruction. | T |
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| 7. Memory references are faster than register references. | F |
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| 8. The instruction set is the programmer's means of controlling the processor. | T |
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| 9. Addresses are a form of data. | T |
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| 10. Not all machine languages include numeric data types. | F |
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| 11. ARM processors support data types of 8 (byte), 16 (halfword), and 32 (word) bits in length. | T |
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| 12. Most machines provide the basic arithmetic operations of add, subtract, multiply, and divide. | T |
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| 13. A branch can be either forward or backward. | T |
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14. Procedures do not allow programming tasks to be subdivided into smaller units. F
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15. The focus of MMX technology is multimedia programming. T
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16. The _____ specifies the operation to be performed. B. opcode
A. source operand reference
C. next instruction reference
D. processor register
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17. A(n) _____ expresses operations in a concise algebraic form using variables. B. high-level language
A. opcode
C. machine language
D. register
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18. There must be _____ instructions for moving data between memory and the registers. C. memory
A. branch
B. logic
D. I/O
-
19. _____ instructions operate on the bits of a word as bits rather than as numbers, providing capabilities for processing any other type of data the user may wish to employ. A. Logic
B. Arithmetic
C. Memory
D. Test
-
20. _____ instructions provide computational capabilities for processing number data. D. Arithmetic
A. Boolean
B. Logic



C. Memory **D. Arithmetic**

21. _____ instructions are needed to transfer programs and data into memory and the results of computations back out to the user.

A. I/O B. Transfer

C. Control D. Branch

22. The x86 data type that is a signed binary value contained in a byte, word, or doubleword, using twos complement representation is _____.

A. general B. ordinal

C. integer D. packed BCD

23. The most fundamental type of machine instruction is the _____ instruction.

A. conversion B. **data transfer**

C. arithmetic D. logical

24. The _____ instruction includes an implied address.

A. **skip** B. rotate

C. stack D. push

25. Which of the following is a true statement? **D. all of the above**

A. a procedure can be called from more than one location

B. a procedure call can appear in a procedure



C. each procedure call is matched by a return in the called program

D. all of the above

26. The entire set of parameters, including return address, which is stored for a procedure invocation is referred to as a _____.

A. branch B. **stack frame**

C. pop D. push

27. Which ARM operation category includes logical instructions (AND, OR, XOR), add and subtract instructions, and test and compare instructions? A. data-processing instructions

A. **data-processing instructions** B. branch instructions

C. load and store instructions D. extend instructions

28. In the ARM architecture only _____ instructions access memory locations. C. load and store

A. data processing B. status register access

C. **load and store** D. branch

29. Which data type is defined in MMX? D. all of the above

A. packed byte B. packed word

C. packed doubleword D. **all of the above**

30. A branch instruction in which the branch is always taken is _____. B. unconditional branch

A. conditional branch B. **unconditional branch**



C. jump D. bi-endian

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31. The operation of the processor is determined by the instructions it executes, referred to as _____ or computer instructions. machine instructions
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32. The collection of different instructions that the processor can execute is referred to as the processor's _____. instruction set
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33. The _____ reference tells the processor where to fetch the next instruction after the execution of this instruction is complete. next instruction
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34. Source and result operands can be in one of four areas: main or virtual memory, immediate, I/O device, and _____. processor register
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35. Opcodes are represented by abbreviations, called _____ that indicate the operation. mnemonics
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36. Instruction types can be categorized as: data processing, data storage, control, and _____. data movement
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37. Zero-address instructions are applicable to a special memory organizations called a _____, which is a last-in-first-out set of locations. stack
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38. The most important general categories of data are: addresses, numbers, characters, and _____. logical data
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39. Today the most commonly used character code is the IRA, referred to in the United States as _____. ASCII
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40. _____ instructions are those that change the format or operate on the format of data. Conversion
-
41. _____ System control



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_____ instructions are those that can be executed only while the processor is in a certain privileged state or is executing a program in a special privileged area of memory.

42. A self-contained computer program that is incorporated into a larger program is a _____. procedure

43. The x86 provides four instructions to support _____ RETURN
procedure call/return: CALL, ENTER, LEAVE, and
_____.

44. _____ are bits in special registers that may be set status flags
by certain operations and used in conditional branch
instructions.

45. Intel's _____ technology is a set of highly optimized instructions for multimedia tasks. MMX
