

1. immediate operand mode
2. based mode
3. Immediate mode
4. 01011110
5. 10100010
6. 11110100
7. 0100 0001
8. 1011 0001
9. A. Immediate
B. Direct
C. Indirect
D. Register
E. Register Indirect
F. Displacement
G. Stack
10. Registers
11. Speed
12. Fetch-decode-Execute Cycle
13. Current IR
14. Control Bus
15. Accumulator(?)
16. Supervisor

Define the registers for the 8086:

a. General Purpose registers:

AX: Accumulator

BX: Base

CX: Counter

DX: Data

b. Pointers and Index

SP: Stack Pointer

BP: Base Pointer

SI: Source Index

DI: Destination Index

c. Segments

CS: Code

DS: Data

SS: Stack

c. Segments

CS:

DS:

SS:

ES:

d. Program Status

Flags

Question 18

2 pts

The difference of register organization of the 8086 and the 80386 is that the 8086 has size registers, but the 80386 has size.

Question 19

1 pts

Processor requirement wherein the processor reads an instruction from memory.

- ☐
- ☐
- ☒ Fetch Instruction
- ☐ Fetch data
- ☐ Process Data
- ☐ Interpret Instruction

Question 20

1 pts

Processor requirement where the execution of an instruction may require performing some arithmetic or logical operation on data.

- ☒ Process Data
- ☐ Fetch data
- ☐ Interpret Instruction
- ☐ Fetch Instruction

Question 21

1 pts

How many types of hazards occur in pipelining?

- ☐ 4
- ☒ 3
- ☐ 2
- ☐ 1

Question 22

1 pts

When multiple-instructions are overlapped during the execution of the program, then function performed is called

- ☐ Multiprogramming
- ☒ Multitasking
- ☐ Hardwired Control
- ☐ Pipelining

Question 23

1 pts

The periods of time when the unit is idle is called as _____

- ☐ Hazards
- ☐ Stalls
- ☒ Both Stalls and Bubbles
- ☐ Bubbles

Question 24

1 pts

The situation wherein the data of operands are not available is called _____

- ☐ Deadlock
- ☒ Data hazard
- ☐ Stock
- ☐ Structural hazard

Question 25

1 pts

The _____ plays a very vital role in case of super scalar processors.

- ☒ Compilers
- ☐ Memory
- ☐ Motherboard
- ☐ Peripherals

Question 26

1 pts

In super-scalar processors, _____ mode of execution is used.

- ☐ In-order
- ☐ Post order
- ☒ Out of order
- ☐ None of the mentioned

Question 27

Provide the description for the different types of data hazards:

- RAW: Read after Write
- WAR: Write after Read
- WAW: Write after Write

Question 28

5 pts

Identify which branch prediction techniques are static or dynamic:

Predict by opcode	dynamic
Branch history table	dynamic
Predict always taken	static
Taken/Not taken Switch	static
Predict by opcode	static

BRANCH PREDICTION Various techniques can be used to predict whether a branch will be taken. Among the more common are the following:

- Predict never taken
- Predict always taken
- Predict by opcode
- Taken/not taken switch
- Branch history table

The first three approaches are static: they do not depend on the execution history up to the time of the conditional branch instruction. The latter two approaches are dynamic: They depend on the execution history.

Question 29	1 pts
Attempts to compare program size and execution speed of programs on RISC and CISC machines that use comparable technology	
<input type="radio"/> Qualitative	
<input type="radio"/>	
<input checked="" type="radio"/> Quantitative	
<input type="radio"/>	

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Question 30	1 pts
Examines issues such as high-level language support and optimum use of VLSI real estate for RISC vs CISC performance comparison.	
<input type="radio"/> Quantitative	
<input checked="" type="radio"/> Qualitative	

For the given figure, identify which is superscalar, superpipelined and a simple 4-stage pipeline.

- a.
- b.
- c.

Question 32
The goal of software techniques and hardware techniques is to exploit
<input type="radio"/>
<input type="radio"/>
<input type="radio"/> Scalability
<input checked="" type="radio"/> Parallelism
<input type="radio"/> Compatibility
<input type="radio"/> Supervision

Question 33

A special hardware buffer is required for the instruction execution sequence, that holds the instruction results, this process is known as

- ☐ Ordered buffer
- ☐ Reorder buffer
- ☐ Control buffer
- ☒ Data buffer

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Objective	ASM Code
Obtain value from thermometer	Start: in ax, 125
Check if the temperature is 25 degrees	cmp ax, 25
If it is equal to 25, call onBurner	je onBurner
Complete onBurner definition	onBurner: out 127, 1 jmp Start