Which type of instructions load data from memory into registers, or store data from registers into memory and transfer data between different kinds of special-purpose registers?

Answer (Please select your correct option)

○ Arithmetic

○ Control

○ Data transfer

○ Floating point

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What functionality is performed by the instruction "lar R3, 36" of SRC?

Answer (Please select your correct option)

○ it will load the register R3 with the contents of the memory location M [PC+36]

○ It will load the register R3 with the relative address itself (PC+36).

○ It will store the register R3 contents to the memory location M [PC+36]

○ No operation

What is the instruction length of the FALCON-A processor?

Answer (Please select your correct option)

○ 8 bits

○ 16 bits

○ 32 bits

○ 64 bits

What is the instruction length of the SRC processor?

Answer (Please select your correct option)

○ 8 bits

○ 16 bits

○ 32 bits

○ 64 bits

Type A format of SRC uses -----------instructions

Answer (Please select your correct option)

○ two

○ three

○ four ✓

○ five

P: R3 ← R5
MAR ← IR
These two are instructions written using RTL .If these two operations is to occur simultaneously then which symbol will we use to separate them so that it becomes a correct statement with the condition that two operations occur simultaneously?

Answer (Please select your correct option)

○ Arrow   ←

○ Colon   :

○ Comma   ,

○ Parentheses ()

Motorola MC68000 is an example of ---------microprocessor.

Answer (Please select your correct option)

○ CISC   ✓

○ RISC

○ SRC

○ FALCON

FALCON-A processor bus has 16 lines or is 16-bits wide while that of SRC is _____ wide.

Answer (Please select your correct option)

○ 8-bits

○ 24-bits

○ 32-bits   ✓

○ 64-bits

Which one of the following register holds the instruction that is being executed?

Answer (Please select your correct option)

○ Accumulator

○ Address Mask

○ Instruction Register ✓

○ Program Counter

Which one of the following design levels is called the gate level?

Answer (Please select your correct option)

○ Logic Design Level ✓

○ Circuit Level

○ Mask Level

○ Register transfer Level

Which one of the following is called **1-address machine?**

Answer (Please select your correct option)

○ Accumulator based machines   ✓

○ Stack based machines

○ General purpose register machines

○ CISC machines

For the _____ type instructions, we require a register to hold the data that is to be loaded from the memory, or stored back to the memory

Answer (Please select your correct option)

○ Jump

○ Control

○ load/store

○ Arithmetic/Logic

_____ is/are defined as the number of instructions processed per second

Answer (Please select your correct option)

○ Throughput

○ Latency

○ Hazards

○ Throughput and Latency

The _____ instruction is completed once memory access has been made and the memory location has been written to.

Answer (Please select your correct option)

○ Store

○ Branch

○ Load

○ Control

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Type B format of SRC uses -----------instructions

Answer (Please select your correct option)

○ Two

○ Three

○ Four

○ Five

Anything that interrupts the normal flow of execution of instructions in the processor is called a/an ----------------

Answer (Please select your correct option)

○ Function

○ Exception ✓

○ Assembler

○ Machine

PowerPC 601 is an example of ---------

Answer (Please select your correct option)

○ FALCON-A

○ EAGLE

○ Superscalar processor   ✓

○ SRC

Which of the following register(s) takes input from the ALSU as the address of the memory location to be accessed and transfers the memory contents on that location onto the memory sub-system?

Answer (Please select your correct option)

○ Instruction Register

○ Memory address register

○ Memory Buffer Register

○ Registers A and C

For any of the instructions that are a part of the instruction set of the SRC, there are certain _____ required; which may be used to select the appropriate function for the ALU to be performed, to select the appropriate registers, or the appropriate memory location.

Answer (Please select your correct option)

○　DMA controllers

○　Memory

○　Control signals　　　　　　　　　　　　　　　　　　　　　　　✔

○　Registers

Which of the following hazard occur when an instruction attempts to access some data value that has not yet been updated by the previous instruction?

Answer (Please select your correct option)

○ Data hazard

○ Structural hazard

○ Branch hazard

○ Complex hazard

Differentiate between the superscalar architecture and VLIW architecture.

Answer (Please click here to Add Answer)

| Normal | Arial | 12 | **B** *I* U |

Which register stores a previously calculated value or a value loaded from the main memory?

Answer (Please click here to Add Answer)

Write at least one advantage and one disadvantage of microprogramming.

Answer (Please click here to Add Answer)

What is the role of timing step generator in a processor?

Answer (Please click here to Add Answer)

| Normal | Arial | 12 | B I U |

Write the related timing steps requirements and data path implementations of **Instruction Fetch** procedure using **structural RTL**

Answer (Please click here to Add Answer)

Identify the hazard in the following sequence of instructions going through the pipelined version of SRC and explain how this hazard can be resolved?

200: str r3, 32
204: add r2, r4, r5
208: sub r1, r2, r3
212: ld r7, 48

Answer (Please click here to Add Answer)

```
200:  str r3, 32
204:  add r2, r4, r5
208:  sub r1, r2, r3
212:  ld r7, 48
216:  shl r6, r3, 5
```

Answer (Please click here to Add Answer)

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