Question No : 1 of 26 Marks: 1 (Budgeted Time 1 Min)

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

correct

- Floating point

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Question No : 2 of 26 Marks: 1 (Budgeted Time 1 Min)

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

The lar instruction, for loading a register with relative address (op-code = 6)
o Example:
lar R3, 56
This instruction will load the register R3 with the relative address itself (PC+56).

Page 39

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).

correct

- It will store the register R3 contents to the memory location M [PC+36]
- No operation

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Question No : 3 of 26 Marks: 1 (Budgeted Time 1 Min)

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

Answer (Please select your correct option)

- 8 bits
- 16 bits

correct

- 32 bits
- 64 bits

Question No : 4 of 26 Marks: 1 (Budgeted Time 1 Min)

What is the instruction length of the SRC processor?

Answer (Please select your correct option)

- 8 bits
- 16 bits
- 32 bits

correct

- 64 bits

Question No : 5 of 26 Marks: 1 (Budgeted Time 1 Min)

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

Four types of instructions are supported by the SRC. page 43

Answer (Please select your correct option)

- two
- three
- four

correct

- five

Question No : 6 of 26 Marks: 1 (Budgeted Time 1 Min)

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?

The ,
operator, specifies that the statements are to be executed simultaneously page 63

Answer (Please select your correct option)

- Arrow ←
- Colon :
- Comma , correct
- Parentheses ()

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Question No : 7 of 26 Marks: 1 (Budgeted Time 1 Min)

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

Answer (Please select your correct option)

- CISC correct
- RISC
- SRC
- FALCON

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Question No : 8 of 26 Marks: 1 (Budgeted Time 1 Min)

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

page 154

Answer (Please select your correct option)

- 8-bits
- 24-bits
- 32-bits

correct

- 64-bits

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Question No : 9 of 26 Marks: 1 (Budgeted Time 1 Min)

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

The Instruction Register holds the instruction that is being executed. page 155

Answer (Please select your correct option)

- Accumulator
- Address Mask
- Instruction Register

correct

- Program Counter

Question No : 10 of 26 Marks: 1 (Budgeted Time 1 Min)

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

The logic design level is also called the gate level.

page 9

Answer (Please select your correct option)

- Logic Design Level — correct
- Circuit Level
- Mask Level
- Register transfer Level

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Question No : 11 of 26 Marks: 1 (Budgeted Time 1 Min)

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

Accumulator based machines
are also called 1-address machines. 21

Answer (Please select your correct option)

- Accumulator based machines — correct
- Stack based machines
- General purpose register machines
- CISC machines

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Question No : 12 of 26 Marks: 1 (Budgeted Time 1 Min)

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

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

page 87

Answer (Please select your correct option)

- Jump
- Control
- load/store

correct

- Arithmetic/Logic

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Question No : 13 of 26 Marks: 1 (Budgeted Time 1 Min)

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

Answer (Please select your correct option)

- Throughput — correct
- Latency
- Hazards
- Throughput and Latency

Question No : 14 of 26 Marks: 1 (Budgeted Time 1 Min)

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

The store instruction is completed once memory access has been made and the memory location has been written to. 224

Answer (Please select your correct option)

- Store — correct
- Branch
- Load
- Control

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Question No : 15 of 26 Marks: 1 (Budgeted Time 1 Min)

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

Type B format includes three instructions; all three use relative addressing mode.

page 44

Answer (Please select your correct option)

- Two
- Three

correct

- Four
- Five

Question No : 16 of 26 Marks: 1 (Budgeted Time 1 Min)

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 correct
- Assembler
- Machine

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Question No : 17 of 26 Marks: 1 (Budgeted Time 1 Min)

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

Examples of superscalar processors
o PowerPC 601
o Intel P6
o DEC Alpha 21164

page 238

Answer (Please select your correct option)

- FALCON-A
- EAGLE
- Superscalar processor

correct

- SRC

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Question No : 18 of 26 Marks: 1 (Budgeted Time 1 Min)

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?

The Memory Address Register 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. page 155

Answer (Please select your correct option)

- Instruction Register
- Memory address register

  correct
- Memory Buffer Register
- Registers A and C

Question No : 19 of 26 Marks: 1 (Budgeted Time 1 Min)

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.

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

page 181

Answer (Please select your correct option)

- DMA controllers
- Memory
- Control signals

correct

- Registers

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Question No : 20 of 26 Marks: 1 (Budgeted Time 1 Min)

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?

Data hazard occur when an instruction attempts to access some data value that has not yet been updated by the previous instruction.

page 231

Answer (Please select your correct option)

- Data hazard — correct
- Structural hazard
- Branch hazard
- Complex hazard

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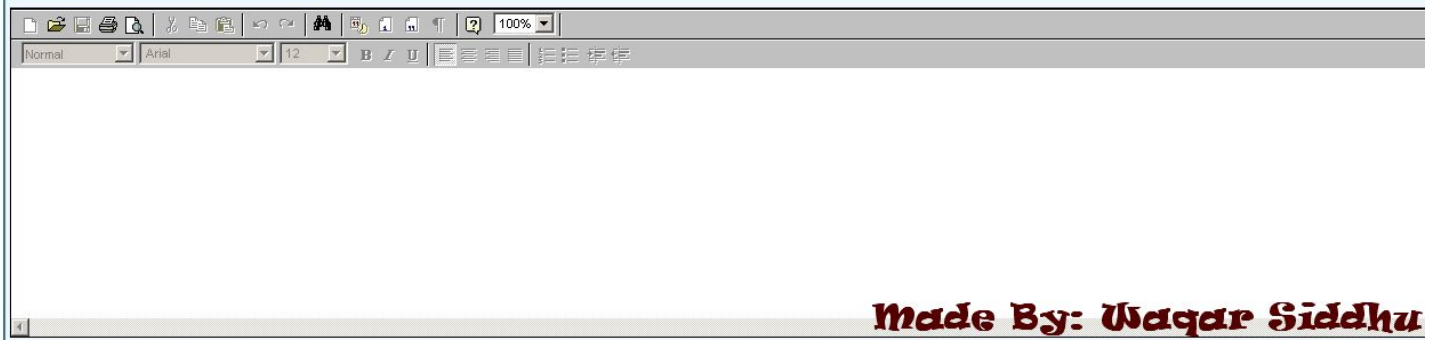
Question No : 21 of 26 Marks: 2 (Budgeted Time 4 Min)

Differentiate between the superscalar architecture and VLIW architecture.

Answer (Please click here to Add Answer)



Question No : 22 of 26 Marks: 2 (Budgeted Time 4 Min)

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

Answer (Please click here to Add Answer)

Question No : 23 of 26 Marks: 3 (Budgeted Time 6 Min)

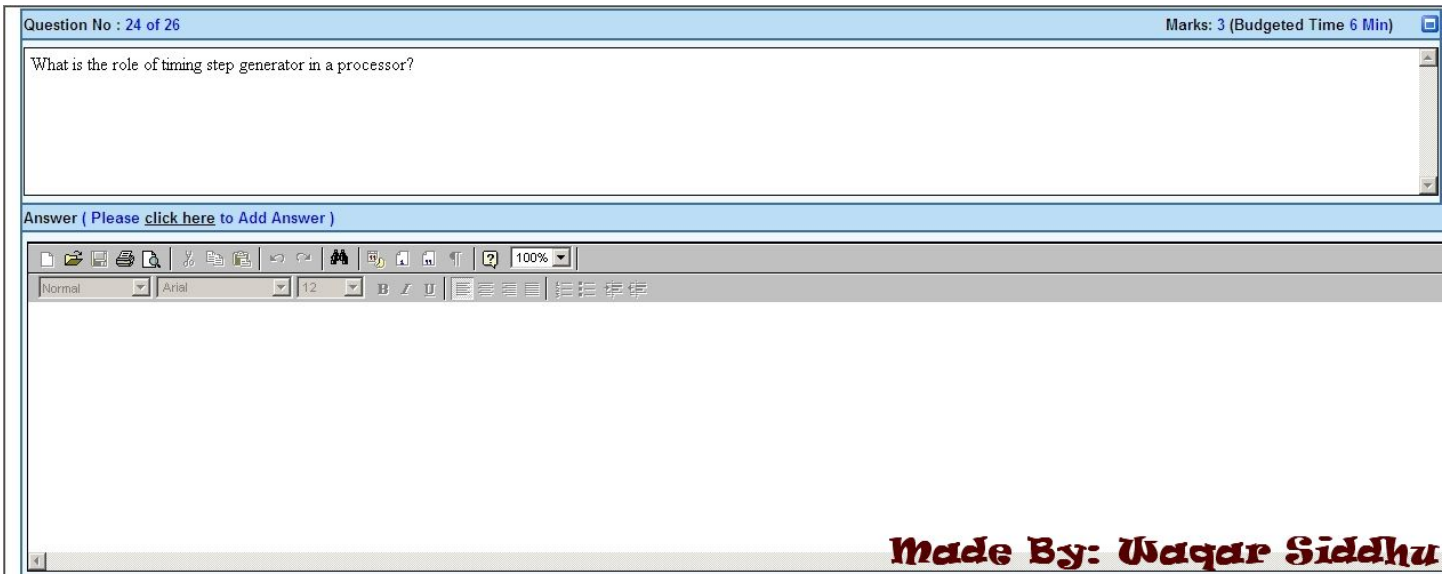
Write at least one advantage and one disadvantage of microprogramming.

Answer (Please click here to Add Answer)

Question No : 24 of 26 Marks: 3 (Budgeted Time 6 Min)

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

Answer (Please click here to Add Answer)



Question No : 25 of 26 Marks: 5 (Budgeted Time 10 Min)

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

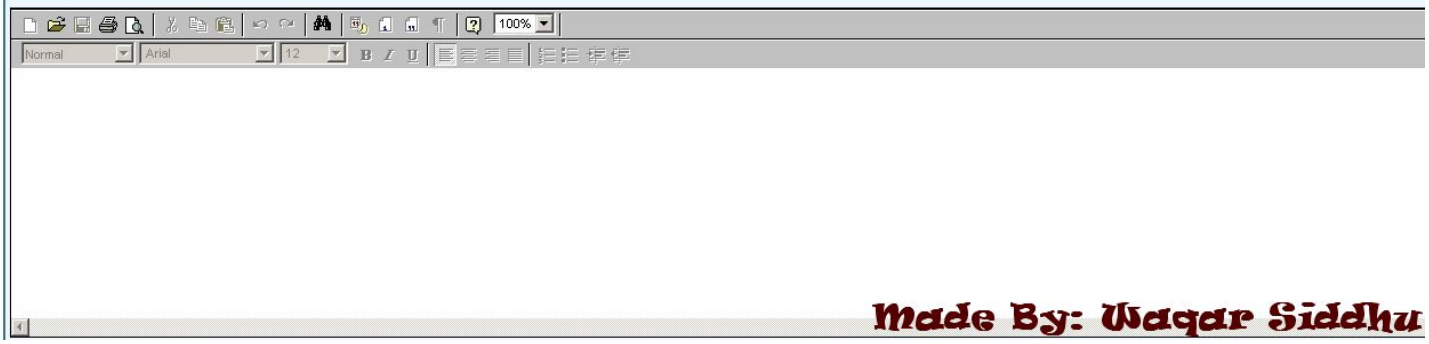
Answer (Please click here to Add Answer)

Question No : 26 of 26 Marks: 5 (Budgeted Time 10 Min)

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

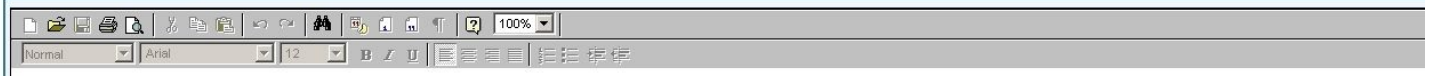
Answer (Please click here to Add Answer)



Question No : 26 of 26 Marks: 5 (Budgeted Time 10 Min)

```
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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