9) What do you mean by the write-back policy?

=> Write-through:- CPU writer are ~~checked~~ chached, but also written to main memory immidiatly. memory always holds current ~~contain~~ content.

=> simple, slow, wastes band width.

write-back:- CPU writes are cached, but not written to main memory untill we replace the block.

OR

The physical page is written back to the hard drive only when it is evicated from physical memory.

10) What is RISC pipeline?

=> RISC = Reduced Instruction set Computers. It was introduced to execute as fast as one instruction per clock cycle. This RISC pipeline helps to simplify the computer's Architecture design.

11) What size of MUXs are needed?

=> MUXs = Multiplexer.

The size of each MUXs must be K:1.

where K is the number of registers.

COA

1) Bus Operation in COA?

⇒ A bus is high-speed internal connection. Buses are used to send control/ signals and data between the processor and other components.

There are total 3 bus system in COA:-

Data Bus:- The data bus allows data to flow between devices.

Address Bus:- The address bus tells devices where the data should go or is coming from.

control Bus:- coordinates activity between various devices to prevent data collisions.

2) General purpose Register?

⇒ General purpose Registers are additional registers that are present in cpu which is used for either memory address or data whenever needed.

Example:- storing current register content when there is an interruption.

3) What is Stack Organization in COA?

⇒ The LIFO list is another name of stack. It is the cpu's most crucial features. It saves information so that the last element saved is retrived first.

A memory space with an address register is called a stack..

4) What is meant by addressing mode?

=> An addressing mode specifies how to calculate the effective memory address of an operand by using information held in registers and/or constants contained within a machine instruction or elsewhere.

5) What is Opcode and Operand?

=> The opcode is the instruction that is executed by the CPU and the operand is the data or memory location used to execute that instruction.

6) How many type of Addressing mode?

=> (i) Immediate
(ii) Direct
(iii) Indirect
(iv) Register Addressing mode
(v) Register Indirect Addressing mode
(vi) Relative Addressing mode
(vii) Index addressing mode.
(viii) Base Register.

(i) Immediate Addressing Mode: The simplest from of addressing mode is Immediate Addressing mode. In this mode the operand value is present in the Instruction.

| Operand = A

(iii) Direct Addressing Mode:- A very simple form of addressing is direct addressing mode. In this mode the address field contains the effective address of the operand.

$$EA = A$$

(iv) Indirect Addressing mode:- An Indirect address is an absolute, relative or symbolic address of a location that contains another address.

$$EA = (A)$$
$$EA = (\ldots(A)\ldots)$$

(v) Register Address:- It is similer to direct addressing mode. The only difference is that the address will refers to a main register rather than a main memory address.

$$EA = R$$

(vi) Register Indirect Addressing mode:-

(i) It is similer to indirect addressing mode.

(ii) The only difference is address fill of the istruction refers to a cpu register instead of memory location.

$$EA = (R)$$

vi) Relative Addressing mode :- EA of the operand is obtain by :-

EA = content of program counter + Address part of Instruction

vii) Index Addressing mode :- EA of the operand is obtain by :-

EA = Content of Index Register + Address part of Instruction.

viii) Base Register :-

EA = content of the base register + Address part of the instruction.

7)

combinational circuit	Sequential circuit
i) Depends upon the present input only	i) Depends upon present input as well as past input.
ii) It is very fast in operation.	ii) It is comparitively slow in Operation.
iii) There is no feedback path between Output and Input.	iii) There is feedback path available between ~~input~~ Output and Input
iv) The operation is very simple.	iv) The operation is very complex.
v) It content no memory element	v) It content memory element.

8) Booth multiplication algorithms and flowchart ?

⇒

9) what is the IEEE standard for floating point Numbers ?

⇒ The IEEE-754 standard describes floating-point formats, a way to represent real numbers in hardware.

⇒ IEEE floating point numbers have three basic components : the sign, the exponent, and the mantissa.

* IEEE floating point Arithmetic.

10) what are the four stages in Instruction cycle ?

⇒ (i) Fetch instruction from memory → Decode the instruction → (iii) Read and effective address from memory → (iv) Execute the instruction.

11) CISC	RISC
i) complex Instruction	i) Simple Instruction.
ii) main focus is Hardware.	ii) main focus is Software
iii) multiple clock cycle	iii) Single clock cycle.
iv) 8-10 addressing mode	iv) few addressing mode.
v) Fixed length Instruction	v) variable length Instruction.