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Program: BSc in CSE

Course: 313 Computer Architecture

Ans to the QNO-3 (a)

\* Finite state machines (FSMs) are at the heart of most Digital Design. The basic idea of an FSM is to store a sequence of different unique states and transition between them depending on the values to input and the current state of the machine. The FSM can be of two types.

Mooore (where the output of the state machine purely depends on the state variables)

The output can depend on the current state variable values and the input values)

Ans to the QNO; 3-(b)

b

Final state machine - mod 3

- \* System state is explicit in representation.
- \* Transitions between states representation as arrows with inputs on arcs.
- \* Output may be either part of state or on arcs.

mod 3 machine:

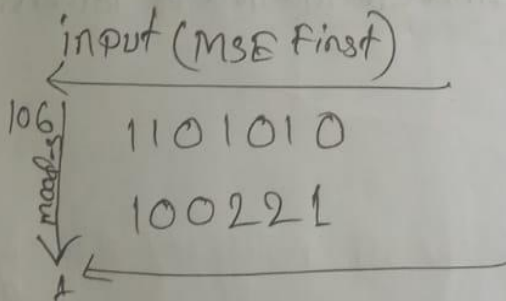
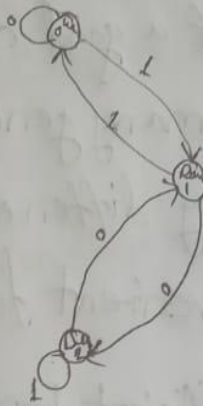


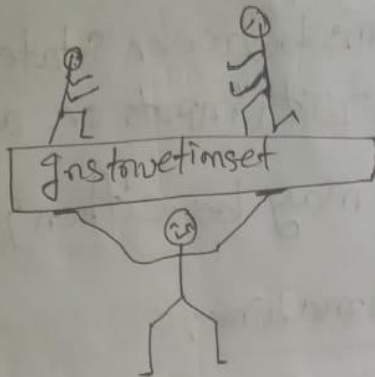
Fig mod-3 machine

## Ans to the q no + 2 (a)

a

of the instruction set: a critical interface:

Software



Hardware

\* Properties of a good abstraction.

= Lasts through many generations (portability)

= Used in many different ways (generality)

= Provides convenient functionality to higher levels.

= Permits an efficient implementation at lower levels.

Ans to the Q: NO-4-(a)

a Fundamental Execution cycle:-

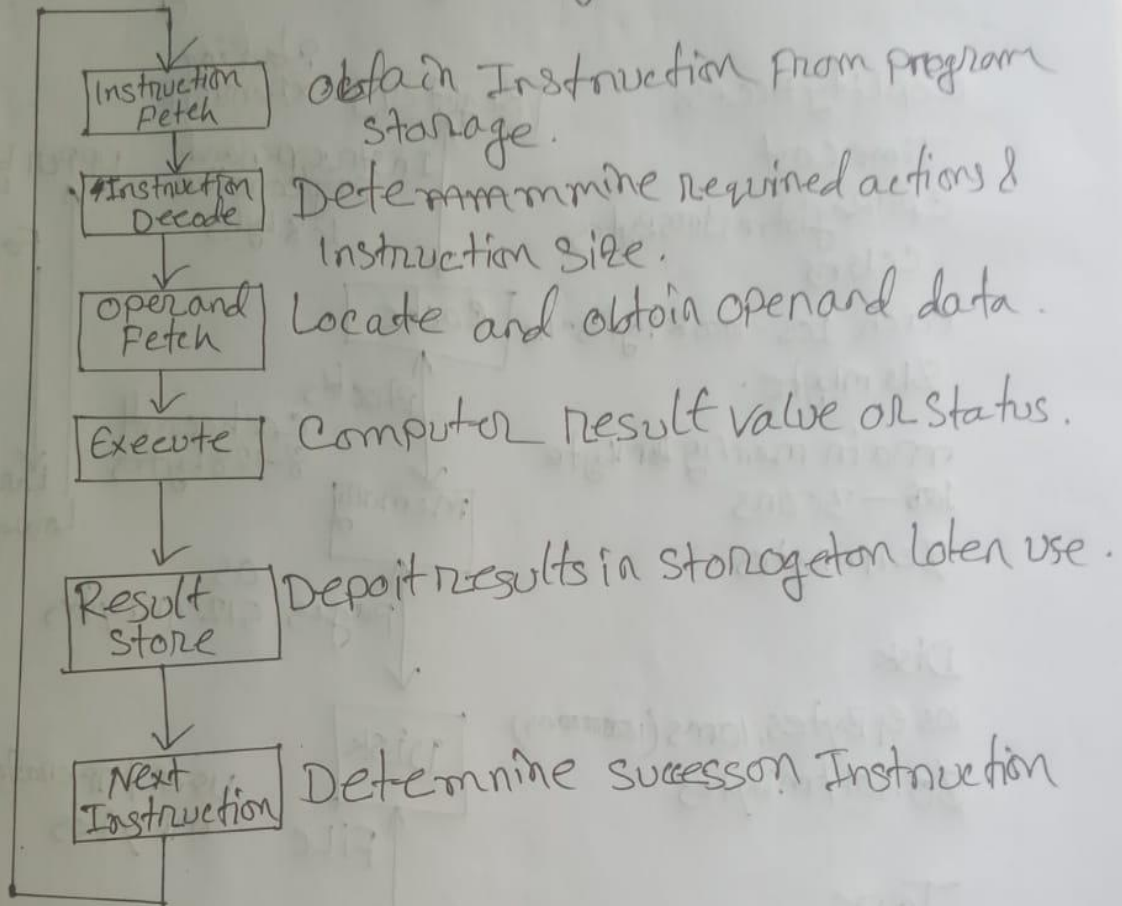


Fig - Fundamental Execution cycle.



## Ans to the Q: NO 4-(b)

### b Levels of the memory hierarchy.

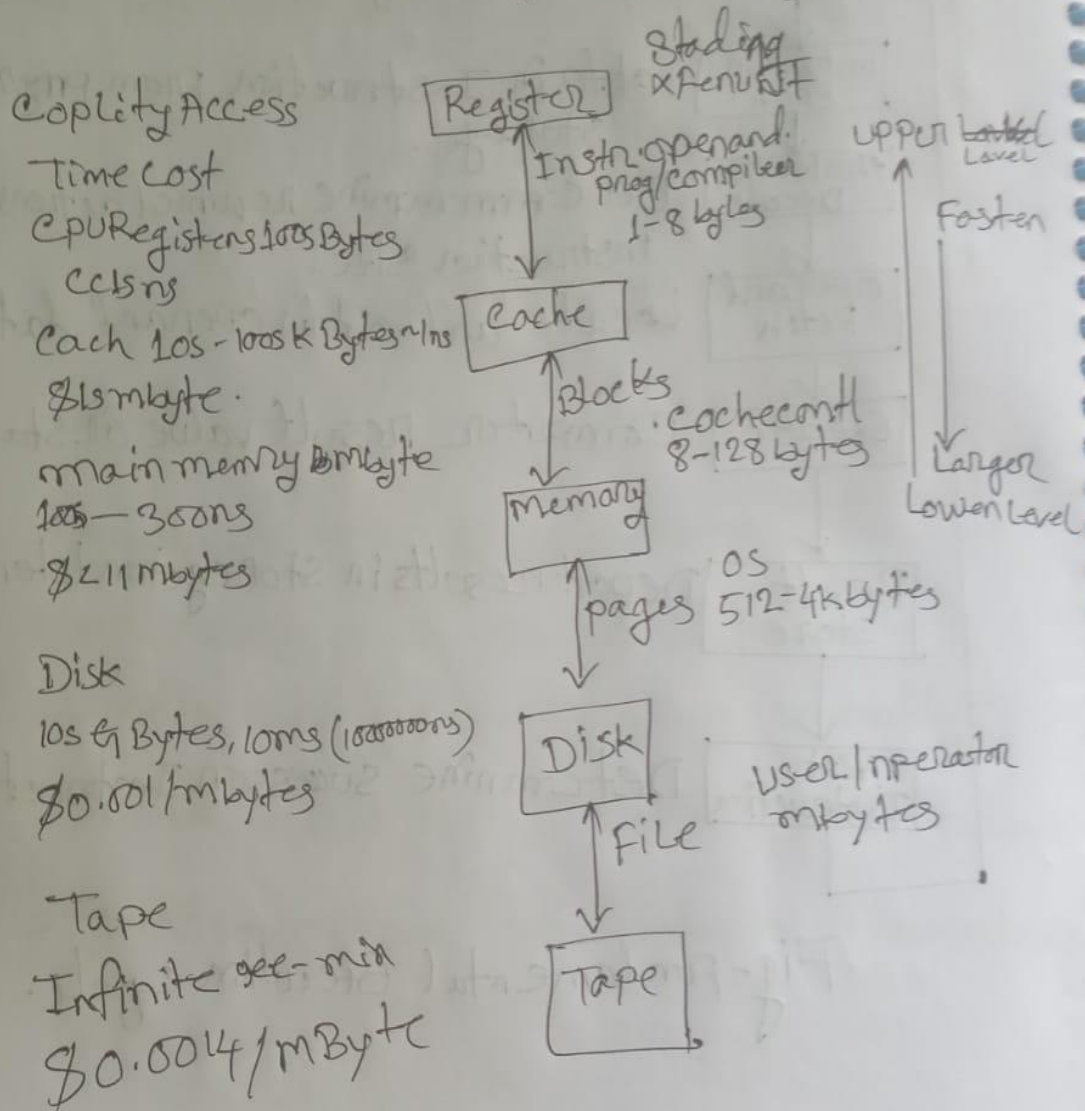


Fig: Levels of the memory hierarchy.