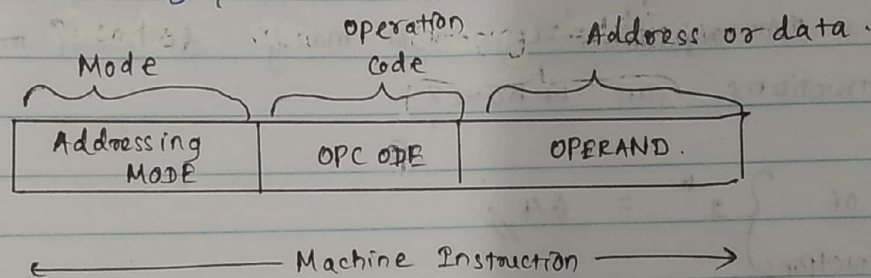① What is meant by Instruction?

An order given to a computer processor by a computer program.

② Instruction Set Architecture (ISA), is the part of the computer architecture related to?

ISA is a part of the abstract model of a computer that defines how the CPU is controlled by the software. ISA acts as an interface between the hardware and the software. Contains memory addresses.

③ Instruction format contains of two main parts. what are they?

Mode	operation Code	Address or data.
Addressing MODE	OPC ODE	OPERAND.

←———————— Machine Instruction ————————→

* Addressing Mode — Rule for operand — data or Address.
* OPCODE — for control unit — which operation to perform.
* OPERAND — For ALU — on data operation to be performed.

④ Where are instruction stored?

Inside the main memory or registers.

⑤. How are instructions stored?

By explicits and by implicits.

⑥ An instruction differs from another instruction by 3 main factors? What are they?

Opcode's length., No: of operands, Length of an operand.

⑦ A computer that is used for simple numerical problems, uses 6 bits for an op code, and 12 bits for a memory address, what is the size of its instruction?

$$size = 6 + 12 = 18 \text{ bit}.$$

⑧ A computer that is used for simple numerical problems, uses 6 bits for an opcode, and 12 bits for a memory address. How many different in instructions can it have?

$$\text{No. of instructions} \Big\} \quad 2^6 = 64 //.$$

⑨ Memory address of the instruction format contains of two parts. What are they?
- Source operand
- Result operand.