

tutorial - 08)

Q-01) What is meant by an instruction?
a single command or operation that the computer's CPU can execute.

Q-02) Instruction set Architecture (ISA) is the part of the computer architecture related to?
Instructions, Input-output.

Q-03) Instruction format contains of two main parts
What are they?
opcode
memory address.

Q-04) Where are instructions stored?
main memory registers.

Q-05) How are instructions stored?
discrete

Q-06) An instruction differs from another instruction by 3 main factors. What are they?
opcode or Operation code
Operand
addressing mode.

Q-07) A computer that is used for simple numerical problems uses 6 bit for an opcode, and 12 bits for a memory address. What is the size of its instruction?

$$6 + 12 = 18 \text{ bits} \\ \underline{\underline{=}}$$

Q-08) 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 instructions can it have?

$$\text{for the opcode} = 2^6 \\ = 64$$

$$\text{for the memory address} = 2^{12} \\ = 4096$$

$$\text{total instructions} = 64 \times 4096 \\ = 262144$$

Q-09) Memory address of the instruction format contains of two parts. What are they?
opcode field
operand.