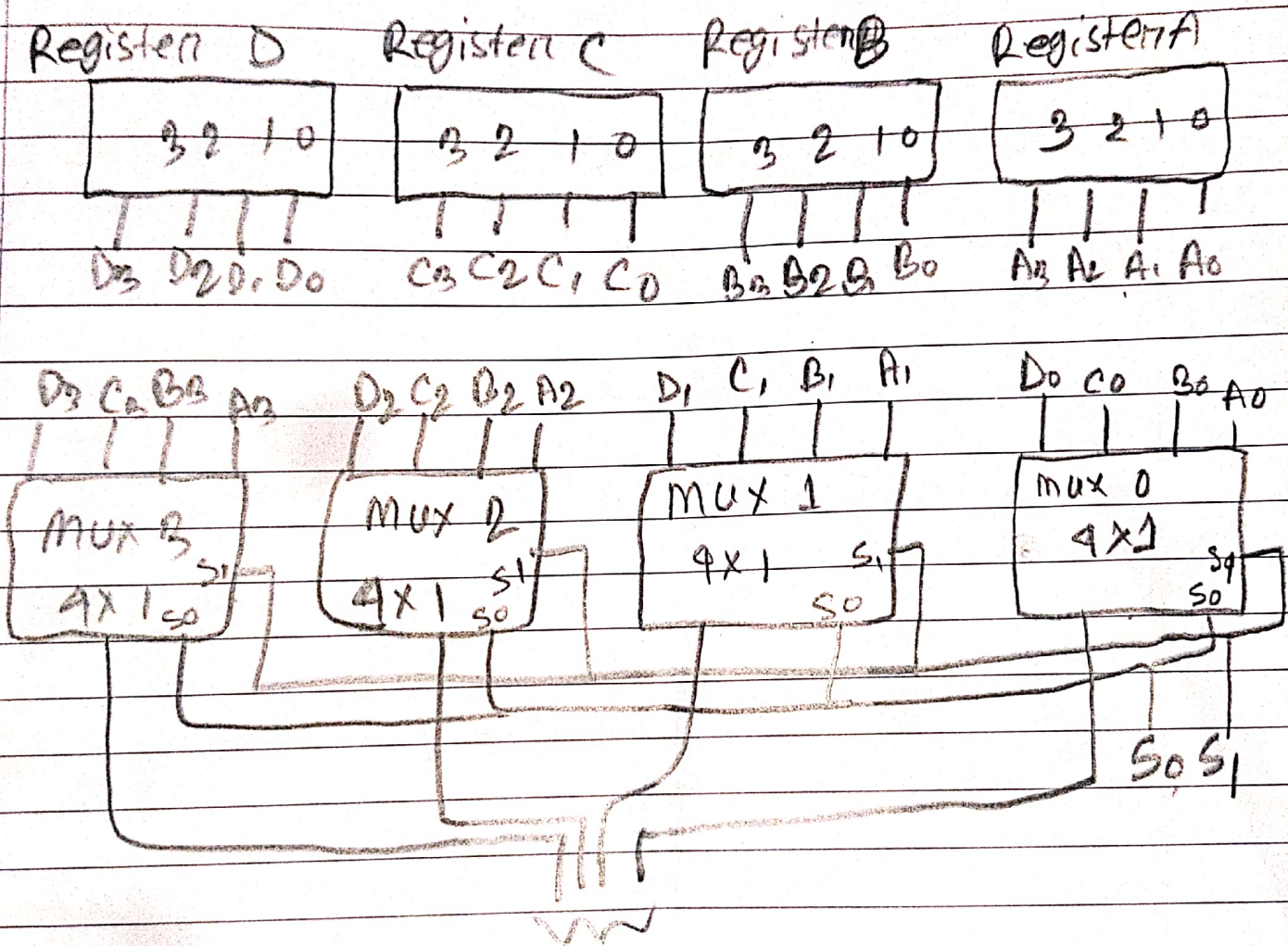


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Answer to the question no: 01

Let's 4 bit register



4 line common BUS.

Answer to the question no: 02

given 32 bit / 12 bit of address field
have 250 instruction how many 1 address
field can be.

8 bit	OP-code	12 bit address	12 bit address
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8 bit OP-code so total instruction

$$= 2^8 = 256$$

given question use 250 so

$$\text{unused} = 256 - 250 = 6.$$

need to expand 1 address so new.

6 instruction used.	12 bit OP-code	12 bit address
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new instruction of

12 bit OP-code so total instruction

$$= 2^{12}$$

used 6 instruction so

$$\text{total new instruction} = (6 \times 2^{12}) + (250)$$

so, 6×2^{12} instruction of 1 address field.

Answer to the question no. 03

given message = B O O K K E E P E R

So frequency of B = 1

O = 2

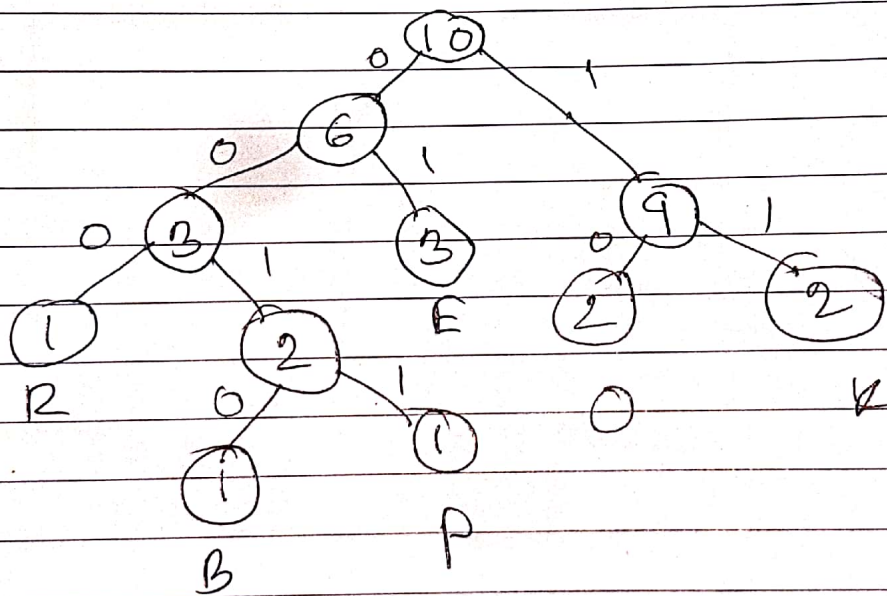
K = 2

E = 3

P = 1

R = 1

Huffman tree,



B = 0010 $\rightarrow 4 \times 1 = 4$ bit

P = 0011 $\rightarrow 4 \times 1 = 4$ bit

R = 000 $\rightarrow 3 \times 1 = 3$ bit

E = 01 $\rightarrow 2 \times 3 = 6$ bit

O = 10 $\rightarrow 2 \times 2 = 4$ bit

K = 11 $\rightarrow 2 \times 2 = 4$ bit

total bit = 25 bit

Answer to the question no: 09

