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# CSE 423: Computer Graphics Quiz - 4

Duration: 15 minutes [No Extra page]

Full Marks: 20

Name	ID: 20
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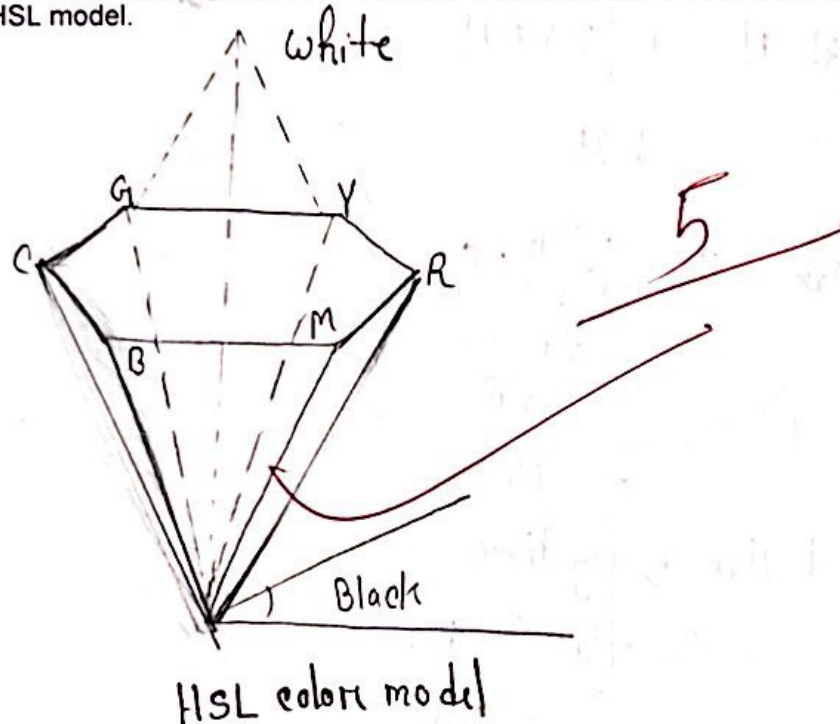
CO1 1. Draw HSL color model

(5)

CO3 2. In a CMY color model given  $C=0.3$ ,  $M=0.9$ ,  $Y=0.5$ . Find out the Hue, Saturation and Lightness in HSL model.

(15)

1.

2. Here,  $C=0.3$ ,  $M=0.9$ ,  $Y=0.5$ 

We know,

$$\begin{bmatrix} R \\ G \\ B \end{bmatrix} = 1 - \begin{bmatrix} C \\ M \\ Y \end{bmatrix}$$

$$= 1 - \begin{bmatrix} 0.3 \\ 0.9 \\ 0.5 \end{bmatrix} = \begin{bmatrix} 0.7 \\ 0.1 \\ 0.5 \end{bmatrix}$$

$$\text{Max} = \text{Max}(0.7, 0.1, 0.5)$$

$$= 0.7$$

$$\text{Min} = \text{Min}(0.7, 0.1, 0.5) = 0.1$$

$$I = \text{Max} - \text{Min} = 0.7 - 0.1 = 0.6$$

$$L = \frac{\text{Max} + \text{Min}}{2} = \frac{0.7 + 0.1}{2} = 0.4$$

$$S = \frac{I}{1 - |2L - 1|} = \frac{0.6}{1 - |2 \times 0.4 - 1|}$$

$$= 0.75$$

Here,  $A = \text{Max}$ ,  $Hue = \left( \frac{G - B}{I} \right) \times 60^\circ$

$$= \frac{0.1 - 0.5}{0.6} \times 60^\circ$$

$$= -40$$

\* Hue is negative,

So,  $Hue = -40 + 360$

$$= 320$$