(5) In this question, we have total 5 samples out of which [3+, 2-]

Now, $Entropy(S) = -p_{\oplus} \log_2 p_{\oplus} - p_{\ominus} \log_2 p_{\ominus}$

$= -\frac{3}{5} \log_2 \frac{3}{5} - \frac{2}{5} \log_2 \frac{2}{5} = 0.97$

Now for find gain we need to find their entropy first.

$Entropy(A_{high}) = -\frac{1}{2} \log_2 \frac{1}{2} - \frac{1}{2} \log_2 \frac{1}{2} = 1$

$Entropy(A_{normal}) = -\frac{2}{3} \log_2 \frac{2}{3} - \frac{1}{3} \log_2 \frac{1}{3} = 0.09$

Now, $Gain(S, A) = Entropy(S) - \sum_{v \in \{high, normal\}} \frac{|S_v|}{|S|} Entropy(S_v)$

$= 0.97 - \frac{2}{5} \times 1 - \frac{3}{5} \times 0.09 = 0.020$

$\boxed{Gain(S, A) = 0.020}$

$Entropy(B_{hot}) = -\frac{1}{2} \log_2 \frac{1}{2} - \frac{1}{2} \log_2 \frac{1}{2} = 1$

$Entropy(B_{mild}) = -\frac{1}{2} \log_2 \frac{1}{2} - \frac{1}{2} \log \frac{1}{2} = 1$

$Entropy(B_{cool}) = \frac{1}{1} \log_2 1 - 0 \log 0 = 0$

Now, $Gain(S, B) = Entropy(S) - \sum_{v \in (Mild, Cool, Hot)} \frac{|S_v|}{|S|} Entropy(S_v)$

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$$= 0.97 - \frac{2}{5} \times 1 - \frac{2}{5} \times 1 - \frac{1}{5} \times 0 = 0.171$$

$$\boxed{Gain(S, B) = 0.171}$$