**Precision metric formula is**- (𝑇𝑃/𝑇𝑃 +𝐹𝑃) , lowest possible value would be 0 when TP is =0 and max value will be 1 when FP=0

**Sensitivity metric formula is**- (𝑇𝑃/ 𝑇𝑃 +𝐹𝑁), lowest possible value would be 0 when TP is =0 and max value will be 1 when FN=0

**Specificity metric formula is**- (𝑇𝑁 /𝑇𝑁+𝐹𝑃),lowest possible value would be 0 when TN is =0 and max value will be 1 when FP=0

Based on the above min and max values following equations can be formulated:

0 <= precision <=1

0 <= sensitivity <=1

0 < =precision \* sensitivity <= sensitivity

0<= 2\* precision \* sensitivity<= 2\* sensitivity ....(1)

0 < = precision +sensitivity <= 2 …..(2)

If we now divide (1) by (2) we get

0<= (2\* precision \* sensitivity)/( precision +sensitivity )< =2\* sensitivity /2

0< =(2\* precision \* sensitivity)/( precision +sensitivity )< = sensitivity

Hence this equation can have min value of 0 and max value <=1 (sensitivity max value 1)