

## **Problem 8:**

**Name: Design a Notch filter with following characteristics**

**Calculation:**

**(A=4 , C=4)**

**Sum of last digit of your group members (A) = 4**

**Resonant Frequency  $f_r$  (Hz) =  $(7 - C) \times 100 - 20 * A = (7-4) \times 100 - 20 \times 4$   
= 220Hz**

**Quality Factor (Q)= 10**

**$Q = f_r / B$ ,  $B = 220 / 10 = 22$**

**Let,  $C = 0.1 \mu F$**

**$R = 0.1591 / BC = 0.1591 / (22 \times 0.1 \times 10^{-6}) = 72.3k \text{ ohm}$**

**$R_r = R / 2Q^2 - 1 = 72.3k / 199 = 369.4 \text{ ohm}$**

