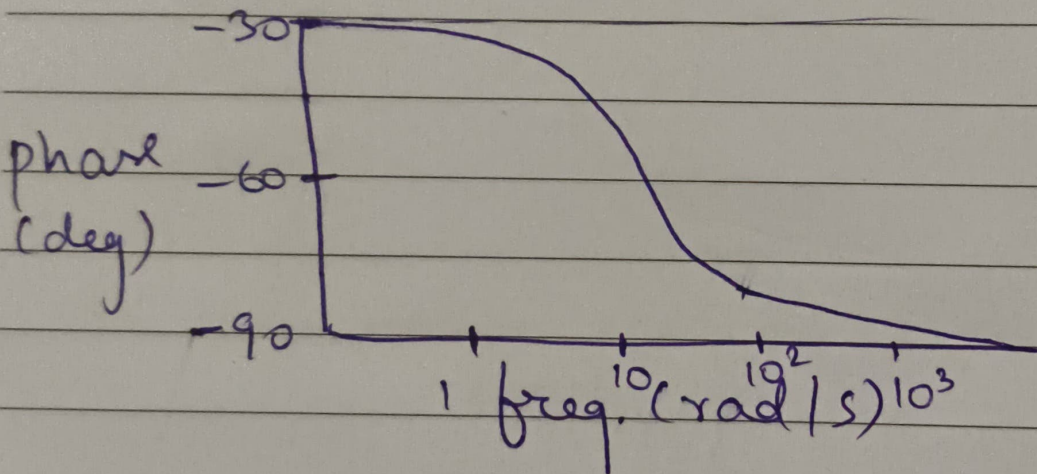
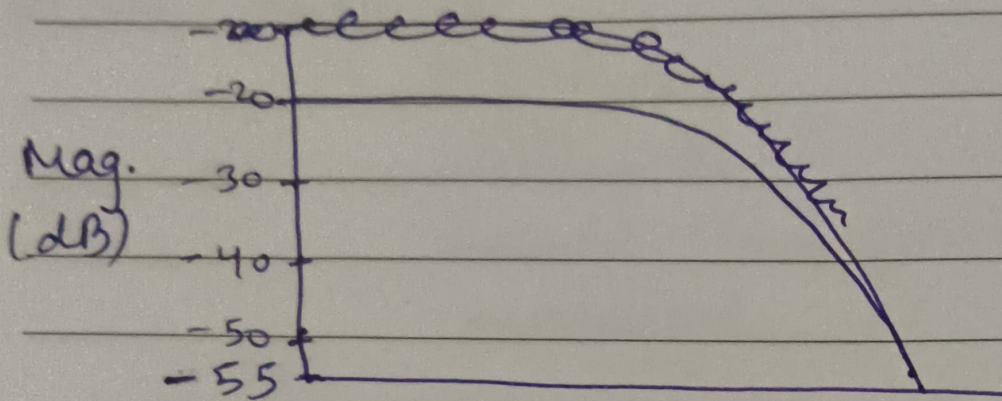


Part A

A.1 ~~Pole~~ $G_1(s) = \frac{10}{s+10}$

pole = -10

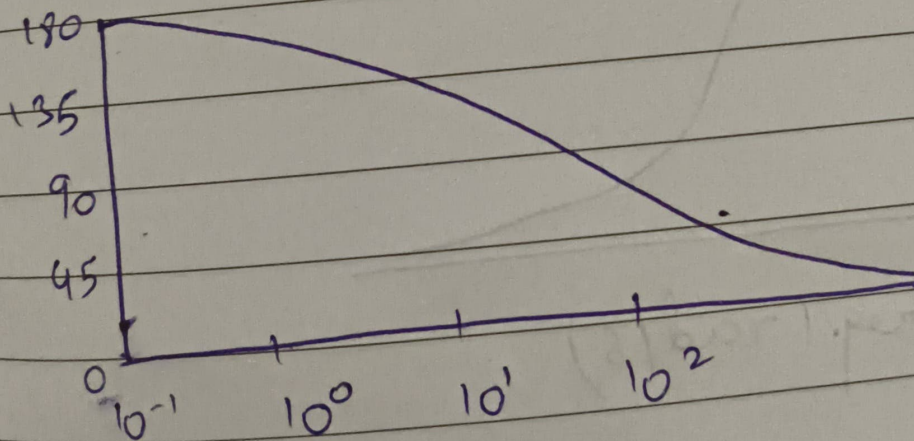
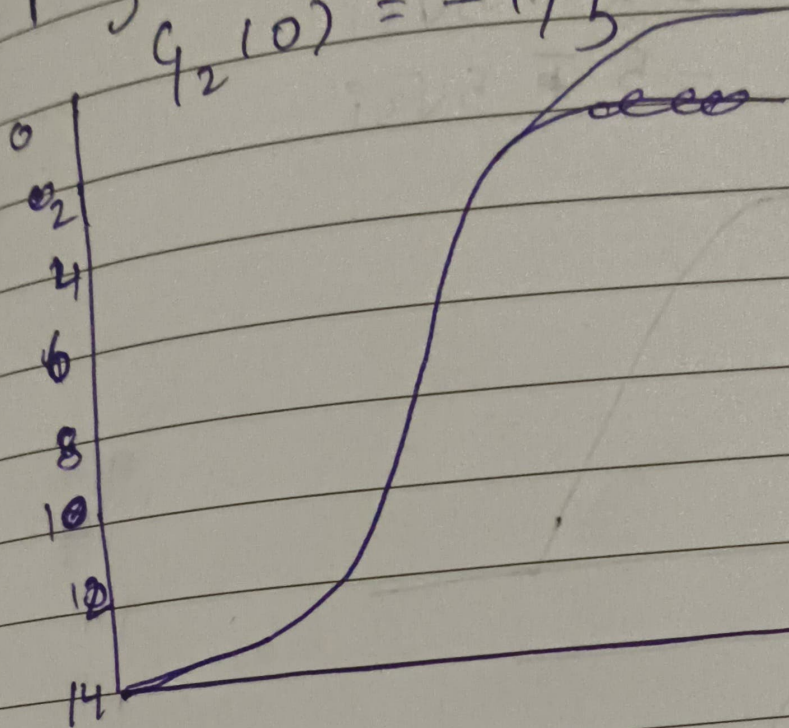
$G_1(0) = 1$



Notes

$$A-2 \quad G_2(s) = \frac{s-2}{s+10}$$

1 zero: $s = 2$ pole: $s = -10$
 $G_2(10) = -1/5$

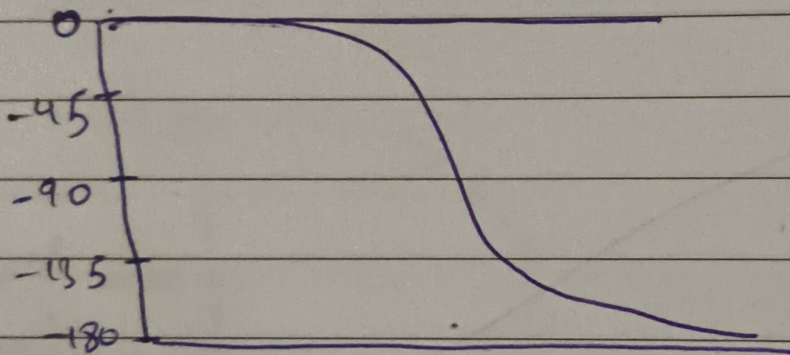
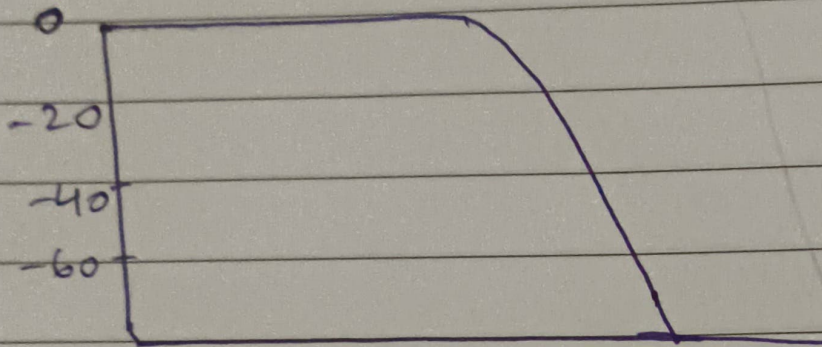


Notes

Date / /

A.3 : $G_3(s) = \frac{100}{s^2 + 10s + 100}$

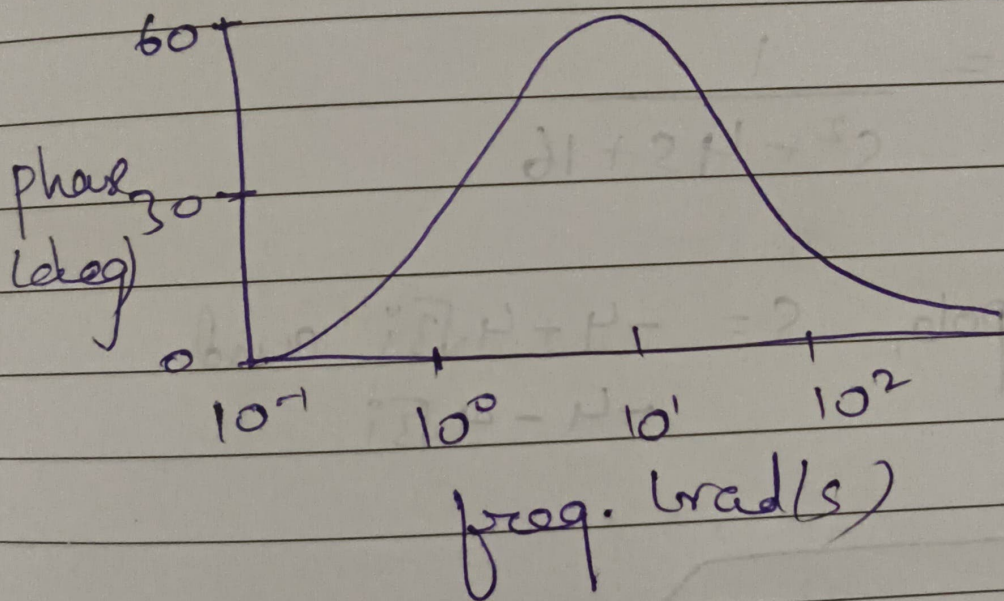
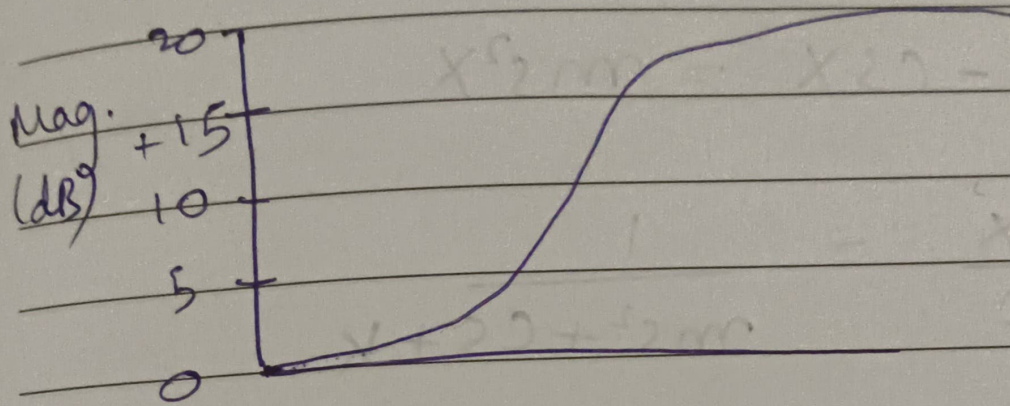
poles: $s = -5 \pm 5\sqrt{3}i$



freq. (rad/s)

A.4 $G_4(s) = \frac{0.1s + 1}{0.01s + 1}$

zero: $s = -10$ pole: $s = -100$



Part B

B.1 (1) $f(t) - kx - c\dot{x} = m\ddot{x}$

(2) $F - kX - cSX = ms^2X$

(3) $G(s) = \frac{X}{F} = \frac{1}{ms^2 + cs + k}$

B.2 (1) $G(s) = \frac{1}{s^2 + 4s + 16}$

(2) for pole, $s = -4 + 4\sqrt{3}i$ and $-4 - 4\sqrt{3}i$

