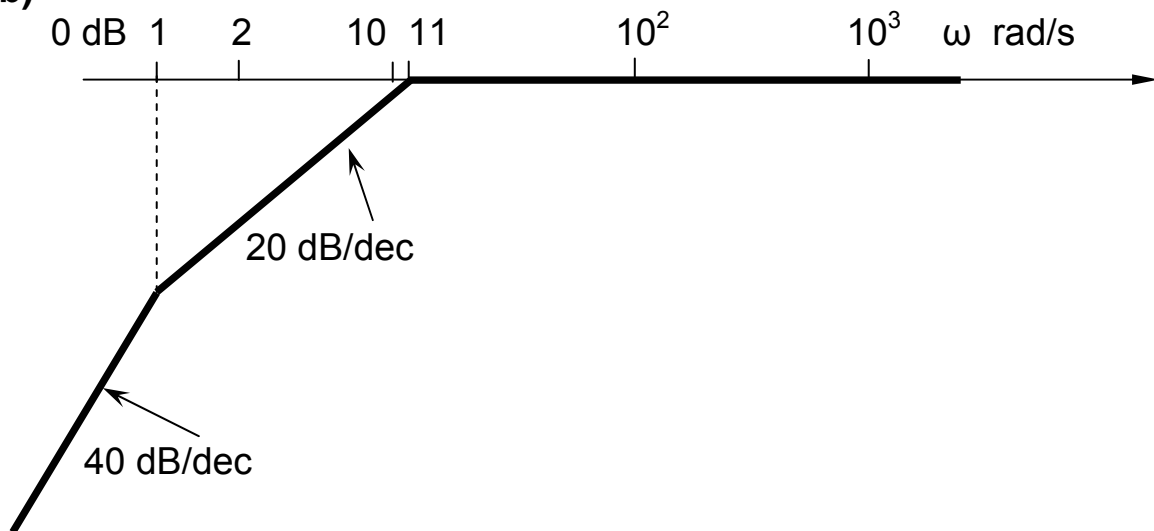


Elettrotecnica I - II – Esame del 1 - 02- 2008
Soluzioni

$$1) V_{eq} = \frac{I_s}{G_1 + G_0 + r_m G_1 G_0}, \quad R_{eq} = \frac{1}{G_1 + G_0 + r_m G_1 G_0}$$

$$2a) \frac{V_u}{V_e} = \frac{s^2 C_1 C_3}{s^2 C_1 C_3 + s G_4 (C_1 + C_3) + G_2 G_4} = \frac{s^2}{s^2 + 12s + 11}$$

2b)



$$2c) v_u(t) = 0,64 \operatorname{sen}\left(t + \frac{129,81}{180} \pi\right) \quad (\text{mV}, \mu\text{s})$$

2d) circuito RC con amplificatore operazionale

```

Ve 1 0 ac 1
C1 1 2 0.125nF
C3 2 3 0.25nF
R2 2 4 2.91k
R4 3 0 1k
Eoa 4 0 3 4 1e8
.AC dec 100 10k 100e06
.probe
.end
    
```

$$3) |V_C| = 1,41 \text{ V}$$

$$4) P = 592 \text{ W} , \quad Q = 296 \text{ VAR}$$