FROM IRWIN, BASIC ENGINEERING CIRCUIT ANALYSIS

13.8. Draw the Bode plot for the function

$$\mathbf{H}(j\omega) = \frac{16}{(j\omega)^2(j\omega 2 + 1)}$$

13.9. Draw the Bode plot for the network function

$$\mathbf{H}(j\omega) = \frac{-\omega^2}{(j\omega + 1)^3}$$

13.10. Sketch the magnitude characteristic of the Bode plot for the transfer function

$$\mathbf{G}(j\omega) = \frac{338(j\omega + 2)}{j\omega(j\omega + 5 - j12)(j\omega + 5 + j12)}$$

13.11. Sketch the magnitude characteristic of the Bode plot for the transfer function

$$\mathbf{G}(j\omega) = \frac{10j\omega}{(j\omega + 1)(j\omega + 10)^2}$$

13.12. Sketch the magnitude characteristic of the Bode plot for the transfer function

$$\mathbf{G}(j\omega) = \frac{5000(j\omega + 1)}{-\omega^2(j\omega + 10)(j\omega + 50)}$$

13.13. Sketch the magnitude characteristic of the Bode plot for the transfer function

$$\mathbf{G}(j\omega) = \frac{16(j\omega + 20)}{j\omega(-\omega^2 + 8j\omega + 32)}$$

13.14. Sketch the magnitude characteristic of the Bode plot for the transfer function

$$\mathbf{G}(j\omega) = \frac{800j\omega}{(j\omega + 2)(-\omega^2 + 4j\omega + 40)}$$

13.15. Sketch the magnitude characteristic of the Bode plot for the transfer function

$$\mathbf{G}(j\omega) = \frac{1000j\omega(-\omega^2 + 4j\omega + 16)}{(j\omega + 0.1)(j\omega + 40)^2(j\omega + 100)}$$

13.16. Draw the Bode plot for the network function

$$\mathbf{H}(j\omega) = \frac{72(j\omega + 2)}{j\omega[(j\omega)^2 + 2.4j\omega + 144]}$$

13.17. The magnitude characteristic for a network function is shown in Fig. P13.17. Determine the network function $\mathbf{H}(j\omega)$.

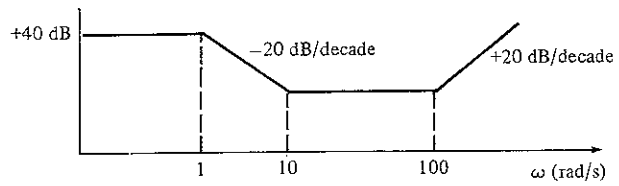

Figure P13.17

13.18. Determine $\mathbf{H}(j\omega)$ if the amplitude characteristic for $\mathbf{H}(j\omega)$ is shown in Fig. P13.18.

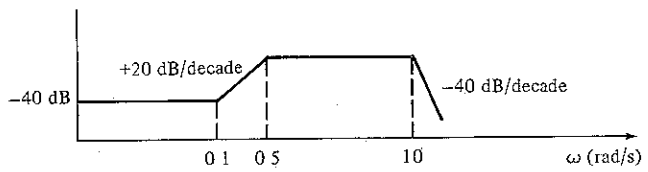

Figure P13.18

13.19. Find $\mathbf{H}(j\omega)$ if its magnitude characteristic is shown in Fig. P13.19.

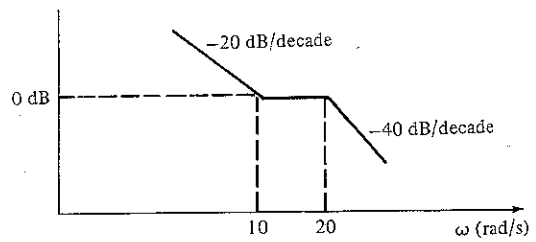

Figure P13.19

13.20. Determine $\mathbf{H}(j\omega)$ if its magnitude characteristic is shown in Fig. P13.20.

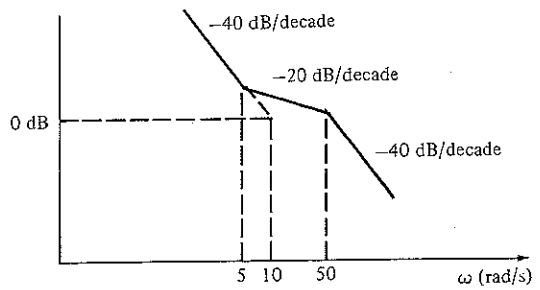

Figure P13.20

13.21. The magnitude characteristic of a band-elimination filter is shown in Fig. P13.21. Determine $\mathbf{H}(j\omega)$.

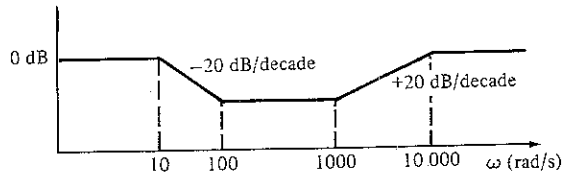

Figure P13.21

13.22. Find $\mathbf{H}(j\omega)$ for the magnitude characteristic shown in Fig. P13.22

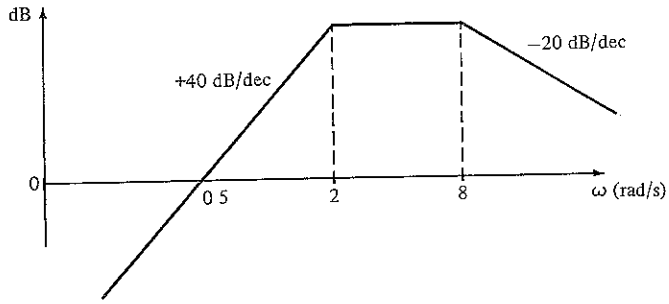

Figure P13.22

13.23. Given the magnitude characteristic for $\mathbf{G}(j\omega)$ in Fig. P13.23, determine the transfer function $\mathbf{G}(j\omega)$

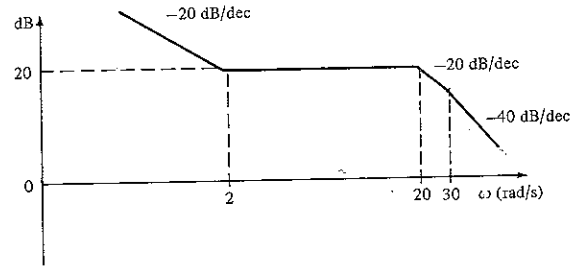

Figure P13.23

13.24. Given the magnitude characteristic for $\mathbf{G}(j\omega)$ in Fig. P13.24, determine the transfer function $\mathbf{G}(j\omega)$

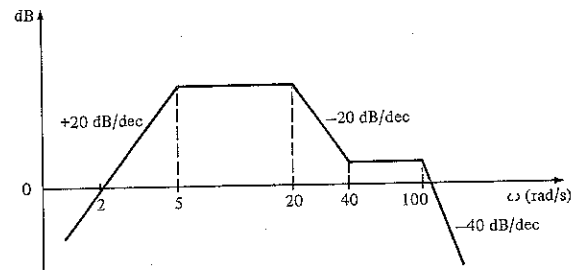

Figure P13.24

13.25. Given the magnitude characteristic for $\mathbf{G}(j\omega)$ in Fig. P13.25 determine the transfer function $\mathbf{G}(j\omega)$

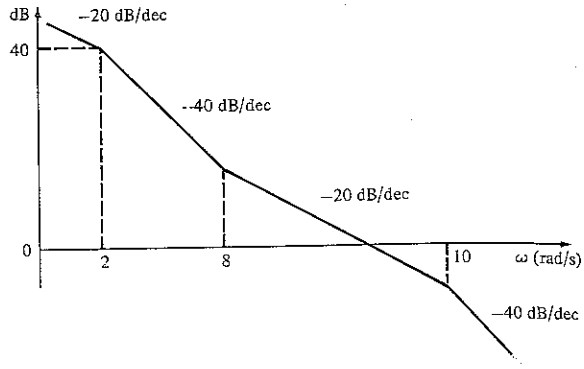

Figure P13.25

13.26. Determine what type of filter the network shown in Fig. P13.26 represents by determining the voltage transfer function

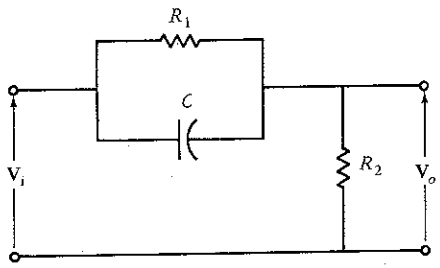

Figure P13.26

13.27. Given the lattice network shown in Fig. P13.27, determine what type of filter this network represents by determining the voltage transfer function

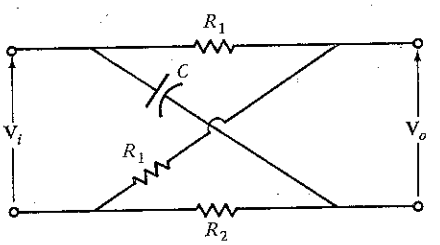

Figure P13.27

13.28. Given the network in Fig. 13.28, *sketch* the magnitude characteristic of the transfer function $\mathbf{G}_V(j\omega)$, labeling all critical values and identifying the type of filter