

TEST-3 ANSWERS

1. $x(t)*g(t) = X[j\omega]G[j\omega]$ and $x(t)g(t) = (1/2\pi) X(j\omega) * G(j\omega)$

2. NOTE Notation: $j\Omega = j\omega$

$A(j\Omega) = X(-j\Omega)$

$B(j\Omega) = X(j\Omega - \pi)$

$C(j\Omega) = X(j\Omega) + B(j\Omega)$ (B as calculated from above)

$D(j\Omega) = X(j\Omega - \pi/2)$

3. $H(j\omega) = \frac{2}{j\omega + 2} - \frac{3}{j\omega + 3}$

$h(t) = \{2\exp(-2t) - 3\exp(-3t)\}u(t)$

4. $X(Z) = \frac{\frac{1}{3\sqrt{2}}z}{(z - \frac{1}{3}\exp(j\pi/4))(z - \frac{1}{3}\exp(-j\pi/4))}$