Practice Quiz 2
(no calculators allowed)

1) The integral $\displaystyle\int_{-t+2}^{\infty} \delta(\lambda+5)d\lambda$ is equal to

a) $u(t)$ b) $u(t+5)$ c) $u(t-7)$ d) $u(-t+2)$ e) none of these

2) The integral $\displaystyle\int_{-\infty}^{t-3} \delta(\lambda-2)d\lambda$ is equal to

a) $u(t)$ b) $u(t-3)$ c) $u(t-2)$ d) $u(t+5)$ e) $u(t-5)$ f) none of these

3) The integral $\displaystyle\int_{-\infty}^{t} e^{-\lambda}\delta(\lambda-2)d\lambda$ is equal to

a) $e^{-2}u(t-2)$ b) $e^{-2}u(t)$ c) $e^{-t}u(t)$ d) $e^{-t}u(t-2)$ e) $e^{2}u(t-2)$ f) none of these

4) The function $x(t)=e^{t-1}\delta(t-2)$ can be simplified as

a) $x(t)=e^{1}$ b) $x(t)=e^{1}\delta(t-2)$ c) $x(t)=e^{1}u(t-2)$ d) none of these

5) The integral $\displaystyle\int_{-\infty}^{t} u(\lambda-1)\delta(\lambda+2)d\lambda$ can be simplified as

a) $u(t+2)$ b) $u(t-1)$ c) $u(t)$ d) none of these

6) The integral $\displaystyle\int_{2}^{t} \delta(\lambda-1)d\lambda$ is equal to

a) 0   b) $u(t)$ c) $-u(1-t)$ d) $u(t-2)$ e) none of these

7) The integral $\displaystyle\int_{-5}^{5} u(1-\lambda)u(\lambda+1)d\lambda$ is equal to

a) 0   b) 1   c) 2   d) 10   e) none of these

8) The integral $\displaystyle\int_{-3}^{t} u(\lambda-1)d\lambda$ is equal to

a) 0   b) $t+3$ c) $(t+3)u(t+3)$ d) $t-1$ e) $(t-1)u(t-1)$

9) The function $x(t) = e^{j1.5t} + 3e^{j3t}$ is

a) not periodic

b) periodic with period 2π

c) periodic with period $\dfrac{4\pi}{3}$

d) periodic with period 2

10) The function $x(t) = \cos(3t + 45^o) + \sin(\pi t)$ is

a) not periodic

b) periodic with period 2π

c) periodic with period $\dfrac{\pi}{3}$

d) periodic with period $\dfrac{3}{\pi}$

11) The function $x(t) = 2\cos(\pi t) + 3j\sin(2\pi t + 30^o)$ is

a) not periodic

b) periodic with period 1

c) periodic with period 2

d) periodic with period 2π

12) If $z = \dfrac{j}{1-j}$, the **magnitude** of z , $|z|$ is

a) 1 b) $\dfrac{-1}{\sqrt{2}}$ c) $\dfrac{1}{\sqrt{2}}$ d) none of these

13) If, $z = \dfrac{1+j}{1-j}$ the **phase** of z , $\angle z$, is

a) 45° b) -45° c) 90° d) -90° e) none of these

14) If we made the variable substitution $\sigma = 1 - \dfrac{\lambda}{2}$ in the integral $\displaystyle\int_{2}^{6} e^{\lambda} x\left(1 - \dfrac{\lambda}{2}\right) d\lambda$, the new integral is

a) $2\displaystyle\int_{2}^{6} e^{2-2\sigma} x(\sigma) d\sigma$ b) $\dfrac{1}{2}\displaystyle\int_{-2}^{0} e^{2-2\sigma} x(\sigma) d\sigma$ c) $2\displaystyle\int_{-2}^{0} e^{2-2\sigma} x(\sigma) d\sigma$ d) none of these

Answer Key

1) c 2) e 3) a 4) b 5) d 6) c 7) c 8) e 9) c 10) a 11) c 12) c 13) c 14) c