

### Assignment-3

1. Find Inverse Laplace transform of the following functions

(a)  $\frac{2(s+1)}{s^2(s^2+4)}$

(b)  $\frac{2(s+1)}{s^2(s-1)}$

(c)  $\frac{9(s+1)}{s^2(s^2+9)}$

(d)  $\frac{9}{s^2(s^2+9)}$

2. Find Laplace transform of the following functions

(a)  $t^2 \sin at$

(b)  $te^{-t} \sin 3t$

(c)  $te^{-3t} \cos 2t$

(d)  $t^2 e^{-3t} \sin 2t$

3. Find Laplace transform of the following functions

(a)  $\frac{(1-e^t)}{t}$

(b)  $\frac{\cos at - \cos bt}{t}$

(c)  $\frac{\sin at}{t}$

(d)  $\frac{e^{at} - \cos bt}{t}$