Vidyavardhini's College of Engineering and Technology

Question Bank of EM 3 for Internal assessment 1

(DSE-All branches ,2022-23)

Each Question is of 5 marks

Q1. Evaluate $\int_0^\infty e^{2t} t\, cos(t)\, dt$ using Laplace transforms.

Q2. Find Laplace transforms of $e^t \sin(2t) \sin(3t)$

Q3. Find $L\{tf(2t)\}$ if $L\{f(t)\} = \frac{s}{s^2+1}$

Q4. Find $L\{f(t)\}$, if $f(t) = t^3 \cosh(t)$

Q5. Find $L\{e^{-2t} + t^{3/2} + \sin^2(t)\}$

Q6. Find the Laplace transform of $\int_0^t \frac{e^{-u}\sin(2u)}{u}\, du$

Q7. Find the inverse Laplace transform of $\log\left(\frac{s^2+a^2}{s^2+b^2}\right)$

Q8. Find the inverse Laplace transform of $\phi(s) = \frac{s}{(s+1)(s+5)}$ using partial fraction

Q9. Find the Inverse Laplace transform of $\phi(s) = \frac{s}{(s^2+9)(s^2+4)}$ using partial fraction.

Q10. Find the inverse Laplace transform of $\phi(s) = \frac{1}{s^2(s+3)}$ using partial fraction.

Q11. Using convolution theorem , find $L^{-1}\left\{\frac{s^2}{(s^2+1)(s^2+4)}\right\}$

Q12. Using convolution theorem , find $L^{-1}\left\{\frac{1}{(s+1)(s-2)^2}\right\}$