



Circuits Analysis - II (EE-201) – Final Term Examination
Summer (2017) – Re-arranged

Time Allowed: 2hrs

Max Marks: 50

DIRECTIONS:

1. Don't write questions. Only write Question number and part number, e.g., Q-1(iv).
2. No sharing of calculators, rulers or any helping material is allowed during exam.

Q: No. 1: Find the Laplace transforms of the following. (2x5=10)

- i) e^{10t}
- ii) $\sin(4t)$
- iii) $t + 5t^3$
- iv) $5 + \cos(t)$
- v) e

Q: No. 2: Find the inverse Laplace of the following. (3x5=15)

- i) $\frac{1}{s}$
- ii) $\frac{1}{(s+5)^2}$
- iii) $\frac{s}{s^2+1^2}$
- iv) $\frac{1}{(s-4)^2+1^2}$
- v) $\frac{e}{s} + \frac{3!}{s^4}$

Q: No. 3: (6+4)

- i) Find the Fourier series of the wave given by;

$$y(t) = \begin{cases} t^3 & 0 \leq t < 1/3 \\ 1 & 1/3 \leq t < 1/2 \end{cases}$$

(assuming that $T = 1/2$)

- ii) Draw the signal given by **Q: No. 3 (i)** on time scale as well as frequency scale.



Q: No. 4: A continuous time voltage signal is given by $x(t) = e^{-5t}$. (10)

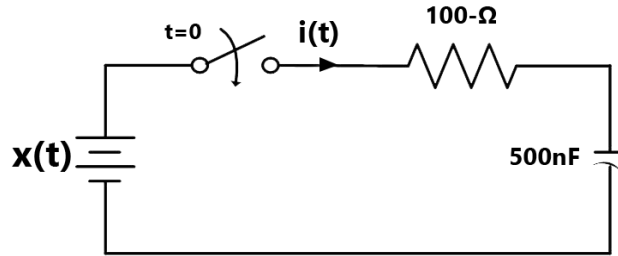


Fig. 1

- i) Find $X(s)$. (2)
- ii) $x(t)$ voltage is applied to the system given in Fig. 1; Write down the expression of current for $t > 0$ for the given system. (8)

Q: No. 5 Find Power (S) dissipated across 2-Ω resistance for the circuit given in Fig. 2; (10)

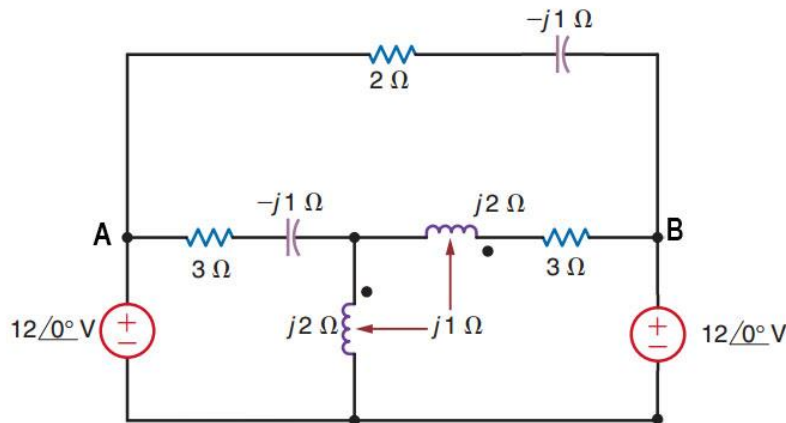


Fig. 2

(Hint: $S=IV$)

THE END