



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

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^{6t}
- ii) $4\sin(2t)$
- iii) $t + 4t^2$
- iv) $5 - \cos(3t)$
- v) e^{-5}

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

- i) $\frac{1}{2s}$
- ii) $\frac{2}{s+5}$
- iii) $\frac{s+2}{(s+2)^2+6^2}$
- iv) $\frac{12}{(s+4)^2+12^2}$
- v) $\frac{e}{2s} + \frac{4.3.2.1}{s^5}$

Q: No. 3: (6+4)

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

$$y(t) = \begin{cases} 4t^2 & 0 \leq t < 1/2 \\ 1 & 1/2 \leq t < 1 \end{cases}$$

(assuming that $T = 1$)

- 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 $x(t) = 5e^{-t}$. (10)

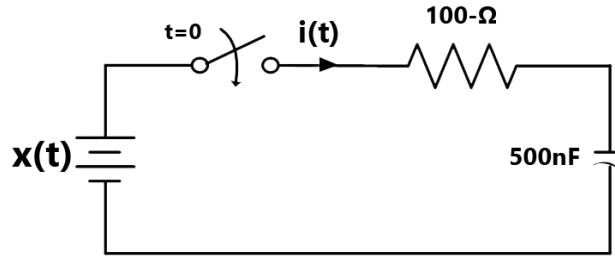


Fig. 1

- i) Find $X(s)$. (2)
- ii) $x(t)$ 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) delivered by each voltage source for the circuit given in Fig. 2; (10)

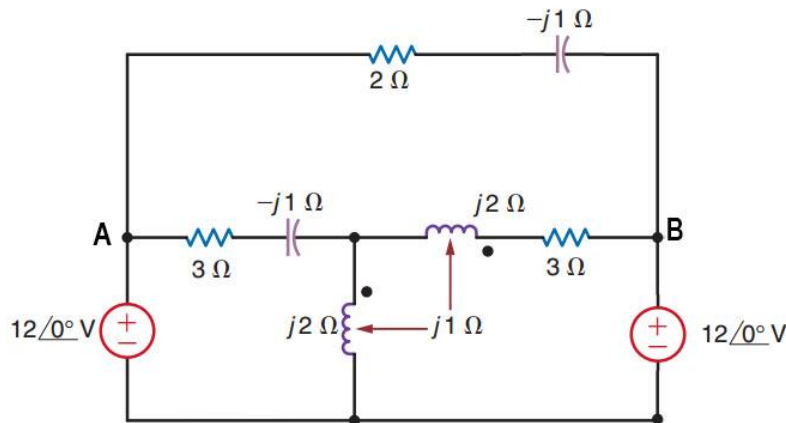


Fig. 2

(Hint: $S=IV$)

THE END