

AC-2965

First Year B. Sc. Examination

April / May - 2015

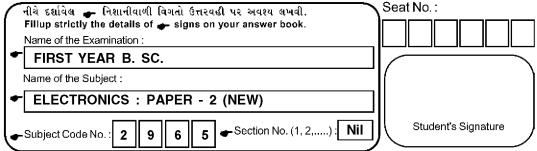
Electronics: Paper - II

(Network Analysis & Filter) (New Course)

Time: 2 Hours [Total Marks: 50

Instructions:

(1)



- (2) All questions are compulsory.
- (3) Assume data if necessary.
- 1 Answer briefly:

- 8
- A) What is initial value theorem in Laplace transform.
- B) Differentiate between resistance and reactance.
- C) Draw pass band, stop band of an ideal filter.
- D) What will be the power factor at resonance.
- 2 A) Find out the Laplace transform of 4th order integral.
 - B) Find Laplace transform of

8

- 1) $\cos \omega t$
- 2) $e^{-\alpha t}$

OR

2 A) Solve the following differfential equation using Laplace transform method.

$$\frac{d^2x}{dt^2} + 18\frac{dx}{dt} + 80x = 8$$

given
$$x(t) = 1$$
 at $t = 0$

$$\frac{dx}{dt} = 2 \text{ at } t = 0$$

| | B) | Find inverse Laplace transform of | 6 |
|---|-------------------------------|---|----|
| | | $I(s) = \frac{S}{S^2 + 9S + 20}.$ | |
| 3 | A) | Explain the Senesoidal response of series R-L-e circuit. | 8 |
| | B) | Evaluate the resonant frequency for a series resonance circuit. | 8 |
| | | OR | |
| 3 | A) | Find the expression for the average power of an a.c. | 8 |
| | B) | State fourier series and find the value of fourier constants. | 8 |
| 4 | Write short notes on any two. | | 16 |
| | A) | | |

RMS Value of an alternating voltage.

Senusoidal response of a purely inductive ckt.

B)

C)

D)

E)

Low Pass Filter Parallel resonance