



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)

<p>नीचे दर्शायेव निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : FIRST YEAR B. SC.</p> <p>Name of the Subject : ELECTRONICS : PAPER - 2 (NEW)</p> <p>Subject Code No. : 2 9 6 5 Section No. (1, 2,.....): Nil</p>	<p>Seat No. : [][][][][][][]</p> <p>Student's Signature</p>
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- (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. 8
B) Find Laplace transform of 8
- 1) $\cos \omega t$
2) $e^{-\alpha t}$.

OR

- 2 A) Solve the following differential equation using Laplace transform method. 10

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

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 Sinusoidal 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) Laplace transform of 4th order derivative.
B) Low Pass Filter
C) Parallel resonance
D) RMS Value of an alternating voltage.
E) Sinusoidal response of a purely inductive ckt.