



**DPP-2965**

**First Year B. Sc. (Sem. II) Examination**

**March / April - 2016**

**Electronics : Paper - II**

Time : 2 Hours]

[Total Marks : 50

**Instructions :**

(1)

नीचे दशांशवले निशानीवाणी विगतो उत्तरवही पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="FIRST YEAR B. SC. (SEM. 2)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="ELECTRONICS - 2"/>	<input type="text"/>
Subject Code No. : <input type="text" value="2"/> <input type="text" value="9"/> <input type="text" value="6"/> <input type="text" value="5"/>	Section No. (1, 2,.....) : <input type="text" value="Nil"/>
Student's Signature	

- (2) All questions are compulsory.  
(3) Digits shown in the right hand side indicate full marks of the question.  
(4) Symbols have their usual meaning.

- 1 Answer briefly : 8
- (a) Write Laplace transform of ramp function.  
(b) Define operational impedance.  
(c) What will be power factor of resistor?  
(d) Define pass band.

- 2 (a) Derive Laplace transform of  $n^{\text{th}}$  order derivative. 10  
(b) Find Laplace transform of  $e^{-\alpha t} \sin \omega t$ . 4

**OR**

- 2 (a) Solve following differential equation using Laplace transform 12

$$\frac{d^2x}{dt^2} + 15\frac{dx}{dt} + 50x = 5, \text{ given that } \frac{dx}{dt} = 2 \text{ and } x = 1 \text{ at } t = 0.$$

- (b) State final value theorem. 2

**3** (a) Give complete step voltage response of series R-L circuit. **10**

(b) Find the expression for r.m.s. value of ac. **4**

**OR**

**3** (a) Give complete sinusoidal steady state response of series R-C circuit. **10**

(b) Discuss operational impedance. **4**

**4** Write short notes : (any **two**) **14**

(a) Series resonance

(b) Average power

(c) Fourier Series

(d) Constant k band pass filter.

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