



**SB-3764**

**M. Sc. (Tech.) (Instrumentation) (Part-I) (Sem. I)  
(ATKT) Examination  
March / April – 2011  
General Electronics : Paper-INS-XII**

Time : 3 Hours]

[Total Marks : 70

**Instructions :**

(1)

नीचे दशांशविक $\leftarrow$ निशान्नीवाणी विगतो उत्तरवली पर अवश्य लक्ष्मी. Fillup strictly the details of $\leftarrow$ signs on your answer book.		Seat No. :	
Name of the Examination :		<input type="text"/>	
$\leftarrow$ M. SC. (TECH.) (INSTRUMENTATION) (PART-I) (SEM. I) ATKT		<input type="text"/>	
Name of the Subject :		<input type="text"/>	
$\leftarrow$ General Electronics : Paper-INS-12		<input type="text"/>	
$\leftarrow$ Subject Code No. :		$\leftarrow$ Section No. (1, 2,.....) :	
<input type="text"/> 3 <input type="text"/> 7 <input type="text"/> 6 <input type="text"/> 4		<input type="text"/> Nil	
		<input type="text"/> Student's Signature	

- (2) All questions are compulsory.
- (3) Figures to the right indicate full marks.
- (4) Assume data if required.
- (5) All questions are carry equal marks.

- 1 Write answer of the following question (any eight) 16
- (i) What is difference between amplifier and oscillator.
  - (ii) Define CMRR and siew rate.
  - (iii) Define K-map and flip flop.
  - (iv) What is multiplexer and demultiplexer ?
  - (v) What is inverting and non-inverting amplifier ?
  - (vi) What do you understand by multistage transistor amplifier ?
  - (vii) Convert  $(2AF)_{16} = ( \quad )_8$
  - (viii) Convert  $(1111)_2 = ( \quad )_{16}$
  - (ix) Draw circuit symbol of EX-OR gate with boolean expression.
  - (x) Define decoder and encoder.

- 2 Answer any three question of the following : 18
- (i) Write short note on RTL and DTL.
  - (ii) Describe in detail synchronous counter with circuit diagram.
  - (iii) Describe the operation of R.I. and D-flip flop.
  - (iv) Explain in brief integrator and differentiator using OP-amp.
- 3 Answer any three question of the following : 18
- (i) What is OP-AMP ? Draw the building block diagram of OP-amp.
  - (ii) Explain the application of UJT.
  - (iii) Write short note on ROM and RAM.
  - (iv) Describe the operation of full adder and full subtractor using logic gate.
- 4 Answer any three question of the following : 18
- (i) In negative feedback amplifier  $A=100$ ,  $\beta=0.04$  and  $V_i=50\text{MV}$ .  
Find :
    - (a) Gain with feedback
    - (b) Feedback factor
    - (c) Feedback voltage
    - (d) o/p voltage
  - (ii) Describe the basic circuit involved in counter.  
Explain the working of a BCD decade counter.
  - (iii) Write short note on D/A converter.
  - (iv) Explain construction and working of MOSFET.
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