



**SD-3811**

**B. Sc. (I.T.) (Sem. II) Examination**

**April / May – 2011**

**Electronics & Digital Communication**

Time : 3 Hours]

[Total Marks :70

**Instructions :**

(1)

नीचे दर्शाविए ← निशानीवाणी विगतो उत्तरवही पर अवश्य कभवी. Fillup strictly the details of ← signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
← B. SC. (I.T.) (SEM. 2)	<div style="border: 1px solid black; border-radius: 15px; padding: 10px; text-align: center;">Student's Signature</div>
Name of the Subject :	
← ELECTRONICS & DIGITAL COMMUNICATION	
← Subject Code No. : <input type="text" value="3"/> <input type="text" value="8"/> <input type="text" value="1"/> <input type="text" value="1"/> ← Section No. (1, 2,.....) : <input type="text" value="Nil"/>	

(2) Draw the figure and give example wherever necessary.

1 Answer the following questions : 16

(a) Explain following definitions : 8

- (i) Potential difference
- (ii) One ampere
- (iii) Mutual inductance
- (iv) Magnetic Flux Density
- (v) relative permeability
- (vi) modulation
- (vii) Conductor
- (viii) Barrier potential of diode

(b) Answered following questions in detail : (any two) 8

- (i) Draw circuit diagram for kickoff's current low and explain it with the help of necessary equations.
- (ii) Explain ohm's low. Explain LED construction and its principal.
- (iii) Draw circuit diagram for R-L-C Series circuit and explain it with the help of necessary equations.

- 2** Answer the following questions in detail : (any **three**) **18**
- (i) Write note on resistor and find out the resistance value for following color codes
    - (a) red, green, blue, silver
    - (b) Yellow, violet, red, gold
  - (ii) Draw circuit diagram and input/output waveform of half wave rectifier and explain operation of half wave rectifier.
  - (iii) Write note on common Base biasing of transistor and explain require equations, current gain  $\alpha_{dc}, \alpha_{ac}$ .
  - (iv) What is capacitor ? Write note on electrolyte capacitor.
  - (v) Write note on internal construction of SCR (Silicon Control Rectifier) with the help of necessary circuit and characteristic diagrams.
- 3** Answer the following questions in detail : (any **three**) **18**
- (i) What is extrinsic semiconductor ? Explain PN junction diode internal construction and explain V/I characteristics.
  - (ii) Explain basic construction and working of N-channel JFET.
  - (iii) Draw the block diagram of RF-receiver and explain in detail.
  - (iv) Write note on bridge rectifier.
  - (v) Describe P-type semiconductor and N-type semiconductor.
- 4** Answer the following questions : **18**
- (a) Answered following questions (any **two**) **4**
    - (i) Explain dielectric heating loss and conductor loss.
    - (ii) What are the needs of modulation ?
    - (iii) Describe frequency shift key (FSK).
  - (b) Answered following questions (any **two**) **14**

- (i) Explain amplitude modulation in detail with the help of necessary waveforms.
  - (ii) Write note on frequency division multiplexing access technique and Time division multiplexing access technique.
  - (iii) (a) Explain the serial and parallel connections of Resistors by using necessary circuit diagrams and equations.  
(b) Explain the serial and parallel connections of capacitors by using necessary circuit diagrams and equations.
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