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BIEL-001

BTCSVI / BTECVI / BTELVI

Term-End Examination

June, 2011

01328

BIEL-001 : BASICS OF ELECTRONICS ENGINEERING

Time : 3 hours *Maximum Marks : 70*

Note : *1. Attempt **any** (5) questions.*

*2. All question carry **equal** marks.*

1.	(a)	Explain the concept of energy bands in solids. Differentiate between insulators, conductors and semiconductors using energy band diagram.	7
	(b)	What do you understand by fermi level ? Explain drift and diffusion currents in solids.	7
2.	(a)	What do you understand by barrier potential ? Also explain biasing in PN junction.	7
	(b)	Draw and explain the V-I characteristics of PN junction (si) diode.	7
3.	(a)	Explain and compare the two types of breakdown mechanisms occur in Zener diode.	7
	(b)	Draw and explain the working of tunnel diode.	7

4. (a) Explain the basic structure of BJT. Also explain the mechanism of carriers flow in NPN type BJT. 7

(b) The emitter current of a transistor is 10 mA. If $\alpha_{dc} = 0.99$ and $I_{CBO} = 10\mu A$. Calculate the value of I_C and I_B. 7

5. (a) Explain in detail the Base Width modulation in BJT. 7

(b) Explain the construction and working of Junction Field Effect Transistor (JFET). 7

6. (a) Explain the working of Bridge Rectifier with its output waveforms. 7

(b) Explain the working and characteristics of Depletion type MOSFET. 7

7. Short Notes :

Attempt ***any Two*** parts of the following : **2x7=14**

(a) Photodiodes

(b) Varactor diode

(c) LC filters