24004

B.Tech. 2nd Semester Examination, May–2016

BASIC OF ELECTRONICS

Paper–ECE-101-F

Common for all Branches

Time allowed : 3 hours] *[Maximum marks : 100*

Note : *Attempt any **five** questions. **Question No. 1 is compulsory.** All questions carry equal marks.*

1.	(a)	Define fermi level.	3
	(b)	List out the different types of oscillators.	3
	(c)	Define slew rate.	3
	(d)	What is –ve feedback ? Give advantages for it.	3
	(e)	Convert $(B2A4)_{16} = (\quad)_8$	3
	(f)	Define LED.	2
	(g)	List out characteristics of an Ideal Op-Amp.	3
2.	(a)	Differentiate between drift and diffusion current.	5
	(b)	Discuss the theory of P-N Junction diode and compare it with an ideal characteristics.	15
3.	(a)	Explain the concept of Cascaded Amplifier. Derive the expression for the gain.	10
	(b)	Discuss effect of –ve feedback on amplifier gain and bandwidth.	10
4.	(a)	Discuss the Bharkhausen criteria for sustained oscillations with an example.	8
	(b)	Explain the working of RC phase shift oscillator with neat diagram.	12

5. (a) Discuss Op-Amp as Differentiator and integrator circuit. 10

   (b) Describe working principle of Invertor and its application. 10

6. (a) Differentiate between combinational circuits and sequential circuits. 8

   (b) Convert the following :

   (i) $(4\ CB4.01)_{16}$ into octal

   (ii) $(432.23)_8$ into Decimal

   (iii) $(1094.45)_{10}$ into Hexadecimal

   (iv) $(1111101)_2$ in decimal. 12

7. Write down short note on : 10×2

   (i) Cathode Ray Oscilloscope (CRO)

   (ii) Digital Multimeter.

8. What is LCD ? Discuss the different types of LCD display. List out the advantage and disadvantage of LCD display. 20

9. Write down short note on : 10×2

   (a) Seven segment display.

   (b) Construction and working of LED's.