

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 Barkhausen criteria for sustained oscillations with an example. 8
(b) Explain the working of RC phase shift oscillator with neat diagram. 12

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5. (a) Discuss Op-Amp as Differentiator and integrator circuit. 10
(b) Describe working principle of Inverter and its application. 10
6. (a) Differentiate between combinational circuits and sequential circuits. 8
(b) Convert the following :
(i) $(4CB4.01)_{16}$ 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.

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