

Roll No.

24004

B. Tech. Ist Sem.

Examination – December, 2015

BASICS OF ELECTRONICS

Paper : ECE - 101-F

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

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

1. (a) Define bandwidth of an amplifier. 3
- (b) Write down Ideal diode equations. 2
- (c) Difference between combination circuits and sequential circuits. 3
- (d) Write down De-Morgans theorem. 3
- (e) Why LED's emit light of different colours? 3

- (f) Write down different type of break down occurring in P-N Junction diode. 3
- (g) Define concept of feedback in amplifier. 3
2. (a) Differentiate between intrinsic and extrinsic semiconductor. 8
- (b) Discuss the working of P-N Junction diode. Also explain characteristics of P-N Junction diode. 12
3. (a) Discuss the classification of an amplifiers. 8
- (b) Explain working of RC-coupled amplifier and also explain frequency response curve. 12
4. (a) Write down different type of oscillators. 5
- (b) Explain the working of Wein Bridge oscillators. Also explain how two transistors are used in Wein Bridge oscillator. 15
5. (a) Write down characteristics of an ideal Op-Amp. 8
- (b) Why we require voltage regulators? Explain how zener works as a voltage regulator. 12

6. (a) Convert the following : 10
- (i) $(536E)_{16}$ into decimal
- (ii) $(4500)_{10}$ into octal
- (iii) $(1092.25)_{10}$ into hexadecimal
- (iv) $(0.1100101)_2$ into decimal
- (b) Realize all basic gates using NOR gate. 10
7. Write short notes on : 10 × 2
- (a) Signal/Function generator.
- (b) Cathode Ray Oscilloscope (CRO)
8. (a) What is display? Differentiate between seven segment, fourteen segment and Dot matrix display. 15
- (b) List out advantage of LEDs in electronic display. 5
9. What is LCD? Discuss the different types of LCD and write down advantages and disadvantages of them. 20