

Roll No.

Total Pages : 02

BT-3/D-22

43167

ELECTRONICS FUNDAMENTALS

ES-201A

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. How is a PN junction diode formed ? Discuss the following modes of a PN junction diode with their V-I characteristics : 15
 - (i) Forward bias
 - (ii) Reverse bias.
2. (a) Discuss how a Zener diode works as a voltage regulator.
(b) Discuss the working principle of a Light emitting diode with its applications. 15

Unit II

3. Discuss the working of a transistor in NPN configuration and also draw and explain the characteristics of a transistor in common emitter configuration. 15

4. (a) Discuss voltage divider biasing in detail.
(b) How does a transistor work as a switch ? Discuss in detail. 15

Unit III

5. (a) Explain the Barkhausen criterion of oscillations.
(b) Discuss the working of a Weinbridge oscillator. 15
6. Discuss the following in brief :
(a) Phase shift oscillator
(b) Collpitt's oscillator.

Unit IV

7. Discuss the following : 15
(a) Sensitivity
(b) Resolution
(c) Precision
(d) Repeatability
(e) Calibration.
8. (a) Draw and explain the block diagram of a digital data acquisition system.
(b) Discuss the construction and working principle of a LVDT. 15