Roll No. ..... Total Pages : 2

BT-3/D-21 **43157**

ELECTRONICS FUNDAMENTALS

Paper : ES-201A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *five* questions in all, selecting at least *one* question from each unit.

UNIT–I

1. (a) What is a PN junction diode? Draw and discuss the V-I characteristics of a PN junction diode.

(b) Differentiate between full wave rectifier and bridge rectifier. 15

2. (a) How a Zener diode act as a Voltage Regulator? Discuss the operation in detail.

(b) Discuss with the help of VI characteristics, how an Avalanche breakdown differs from a Zener breakdown. 15

UNIT–II

3. (a) Discuss the operation of a transistor as a switch.

(b) Discuss in detail the operation of a NPN transistor. 15

4. (a) What is biasing? Discuss in detail the Voltage divider biasing method.

(b) Draw and explain the common emitter transistor configuration and its characteristics. 15

UNIT–III

5. (a) What is Barkhausen criterion of oscillations? Derive its equation.

(b) What is Hartley's Oscillator? Discuss its operation in detail. 15

6. Write short notes on the following :

(a) Colpitt's oscillator.

(b) Wein bridge oscillator. 15

UNIT–IV

7. (a) Discuss the terms, Senstivity, Resolution, Accuracy and Precision in context to electronic measurement system.

(b) What is an error? Discuss the various types of errors encountered in an electronic measurement system. 15

8. (a) What is a transducer? Discuss the working of a LVDT with its applications.

(b) What is Data acquisition system? With the help of a block diagram, explain its working. 15