

Roll No.

Total Pages : 02

BT-3/D-19 33154

**BASIC ELECTRONICS ENGINEERING
ES-203A**

Time: Three Hours]

[Maximum Marks : 75]

Note : All questions in Part-A and Part-B are compulsory. Attempt any *four* questions from Part-C selecting atleast *one* question from each unit.

PART-A

1. Write short notes on :
 - (a) Input-Output characteristics of *p-n* junction diode.
 - (b) Op-Amp in inverting configuration.
 - (c) Barkhausen Criteria.
 - (d) Design AND, OR and NOT gate using NAND.
 - (e) Cellular concept of mobile communication. **15**

PART-B

2. Discuss half wave rectifier. **5**
3. Discuss op-Amp as adder and subtractor. **5**
4. Discuss concept of Multiplexer and Demultiplexer. **5**
5. Discuss frequency modulation in communication system. **5**

PART-C

Unit-I

6. Discuss the concept of BJT and its working in all three regions of operation. **10**

7. Discuss the concept of Full Wave Centre Tap Rectifier and compute its V_{rms} and efficiency. **10**

Unit-II

8. Discuss the application of Op-Amp as comparator and averaging amplifier. <http://www.kuonline.in> **10**

9. Discuss Wienbridge oscillator in detail. **10**

Unit-III

10. Simplify using K-map
 $f(A, B, C, D) = \prod M (0, 1, 2, 6, 8, 10, 11, 12).$ **10**

11. Design 3-bit counter using flip flop. **10**

Unit-IV

12. Discuss the concept of GSM system in detail. **10**

13. Discuss various AM modulation techniques. **10**