

BT-8/D-23

48319

MIXED SIGNAL DESIGN

Paper-ECO-16A

Time : Three Hours]

[Maximum Marks : 75

Note : There are eight questions in total organized into four units. Candidates have to attempt *five* questions selecting at least *one* question from each unit. All questions carry equal marks.

UNIT-I

1. What do you mean by sampling switches? Design MOSFET as a switch. Discuss its speed and precision considerations. (15)
2. What are switched capacitor amplifier? Describe in detail switched capacitor integrator and switched capacitor common mode feedback. (15)

**EXAMKIT
UNIT-II**

3. Characterize a comparator. Design the CMOS as a comparator and discuss its functions. (15)
4. Discuss the operation and applications of PLL. (15)

UNIT-III

5. With the help of the architecture diagram explain the operation of D/A converter in detail. (15)

6. Explain each in detail :

(a) Sample and Hold characteristics. (7.5)

(b) R-2R ladder networks. (7.5)

UNIT-IV

7. Design and discuss the architecture of ADCs. Also explain the applications of DACs and ADCs. (15)

8. Write short notes on the following : (3×5=15)

(a) The two-step Flash ADC.

(b) Integrating ADCs.

(c) The oversampling ADCs.

