24004

B.Tech. 2nd Semester F-Scheme Examination,
May–2018
BASICS OF ELECTRONICS
Paper–ECE–101–F
(Common for All Branches)

Time allowed : 3 hours] *[Maximum marks : 100*

Note : ***Question No. 1 is compulsory*** *and attempt* ***one*** *question from each section.*

1. (a) What is an amplifier and why cascading is required in amplifier ?
   (b) What is slew rate and CMRR ?
   (c) Define drift and diffusion current.
   (d) What is fermi level ?
   (e) What is negative feedback ? Give its advantages.

Section–A

2. (a) Discuss characteristics of PN-Junction diode.
   (b) Why we prefer Si material instead of Ge ?

3. Discuss with the help of diagram frequency response of RC coupled amplifier.

Section–B

4. (a) Differentiate inverter and UPS.
   (b) Explain crystal oscillator.

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5. (a) Explain OP-amp with its block diagram.

(b) Explain how OP-amp act as Integrator and differentiator.

Section–C

6. (a) Realize AND, OR, NOT gates using NAND and NOR. 10

(b) Explain block diagram of CRO. 10

7. Convert the following : 20

(a) $(3642)_8 = (\quad)_{16}$

(b) $(7684)_{10} = (\quad)_8$

(c) $(AD34)_{16} = (\quad)_8$

(d) $(4386)_{10} = (\quad)_2$

(e) $(364.321)_8 = (\quad)_2$

Section–D

8. Which one is better between LCD and LED ? Why ? Discuss the different types of LCD in detail. 20

9. Write short notes on : 20

(i) Seven segment Display.

(ii) J K flip flop.

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