BCA-03

June - Examination 2018

BCA Pt. I Examination

Basic Electronics

Paper - BCA-03

Time : 3 Hours]   **[Max. Marks :- 100**

Note: The question paper is divided into three sections A, B and C. Write answers as per the given instructions.

Section - A $10 \times 2 = 20$
(Very Short Answer Type Questions)

Note: Answer **all** questions. As per the nature of the question delimit your answer in one word, one sentence or maximum up to 30 words. Each question carries 2 marks.

1) (i) Write about Stability and Causality?

    (ii) What is diffusion current?

    (iii) Define the term doping concentration?

    (iv) What are SOP and POS terms in digital electronics?

    (v) What is thermal stability in transistors?

    (vi) What is use of clipper and clamper circuits?

    (vii) Define the statement of Fermi-Dirac Statistics?

(viii) What is mobility and conductivity?

(ix) What is the work of shift registers?

(x) What is statement of Thevenin's theorem?

Section - B $4 \times 10 = 40$
(Short Answer Questions)

Note: Answer **any four** questions. Each answer should not exceed 200 words. Each question carries 10 marks.

2) Discuss the transistor as a switch with its diagram.

3) Explain the CE configuration of amplifier with neat and clean diagram.

4) Explain NAND Gate operation using NOR Gate and NOR Gate operation using NAND Gate with the property of Universal Gate.

5) Describe the functioning of current characteristics in NPN transistor.

6) Explain the minimization through K-Map for term $F = ABC + A'B'C + ABC' + A'BC'$.

7) Describe CMOS technique with neat and clean diagram with its advantages in electronics.

8) Describe all kind of breakdown voltage regions with their suitability of appearance in V-I Characteristics graph

9) What do you mean by early effect in transistors?

Section - C $2 \times 20 = 40$
(Long Answer Questions)

Note: Answer **any two** questions. You have to delimit your each answer maximum up to 500 words. Each question carries 20 marks.

10) Describe the Intrinsic and Extrinsic semiconductors with neat and clean diagram.

11) Design J-K flip flop using R-S flip flop.

12) Explain functioning of Ripple counter with an example.

13) Explain the Norton's theorem with an example.

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