

Roll No.....

Total No. of Printed Pages: 1

Total No. of Questions: [09]

B. Tech EE (Semester – 8th)
ANALOG & DIGITAL CIRCUIT ANALYSIS
Subject Code: BEEE0F92
Paper ID: [18OE111509]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

Q1 Attempt the following:

- a. What is a Zener Diode?
- b. Draw the V-I Characteristics of a Field Effect Transistor.
- c. List the Ideal characteristic of an Op-Amp.
- d. Which are the Universal gates? Why they are so called?
- e. Draw the logic diagrams of Half-adder & Half Subtractor.
- f. What is a Flip-flop? Give examples.
- g. Draw the circuit symbols of a Varactor diode & Photo diode.
- h. What is a D.C. Load line in a transistor?
- i. Give applications of a Multivibrator.
- j. What are the configurations of a Bipolar Junction Transistor?

Section – B

(5 marks each)

- Q2 Explain how a Zener Diode is used as a voltage regulator with the help of a circuit diagram.
- Q3 What is transistor biasing? Explain any one transistor biasing technique.
- Q4 Discuss the working principle of a Monostable multivibrator using a diagram.
- Q5 Explain the working of a Multiplexer using a suitable example.
- Q6 Describe J-K Master slave flip flop with the help of truth table and circuit diagram.

Section – C

(10 marks each)

- Q7 Explain a 4-bit binary adder and one digit BCD adder with the help of logic gates.
- Q8 Describe how an Op-amp is used as an Integrator and a Differentiator giving their diagrams.
- Q9 Write short note on: Up-Down Counters.