

1128
B.E. (Electrical and Electronics Engineering)
First Semester
ECE-102: Introduction to Electronics
(Common with EC)

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

- I. Attempt the following:-
 - a) In the cut-off region, how are the base-emitter and collector-base junctions of a transistor biased?
 - b) How is a forward bias condition established?
 - c) What do you mean by the excitation table of a flip flop?
 - d) What are the basic building blocks of an op-amp?
 - e) What is the difference between analog and digital communication? (5x2)

UNIT - I

- II. With the help of diagrams, explain the construction and the operation of a forward biased npn junction. (10)
- III. What are clippers? Illustrate the response of a series clipper to different types of alternating waveforms. (10)
- IV. a) Draw the base characteristics for a common-emitter silicon transistor and show its cutoff, active and the saturation region.
- b) Minimize the following function and realize using minimum number of gates:
 $f = \sum m(0, 1, 3, 5, 6, 8, 9, 10, 12, 15)$ (2x5)

UNIT - II

- V. What is the function of a RAM? Show the construction of a 1-bit read/write memory cell using flip flops. (10)
- VI. What is an op-amp? Explain the basic circuit of an op-amp. What are offset currents and voltages? (10)
- VII. What is the need for modulation in a communication system? Where is analog communication used? Which type of application prefers digital communication and why? (10)

x-x-x

1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

2. It is essential to ensure that all data is entered correctly and that the system is regularly updated.

3. The second part of the document outlines the various methods used to collect and analyze data.

4. These methods include surveys, interviews, and focus groups, each with its own strengths and weaknesses.

5. The third part of the document provides a detailed overview of the data analysis process.

6. This process involves identifying patterns, trends, and correlations within the data set.

7. The final part of the document discusses the importance of interpreting the results of the analysis.

8. It is crucial to understand the limitations of the data and to avoid drawing conclusions that are not supported by the evidence.

9. In conclusion, this document highlights the significance of data in decision-making and the need for a systematic approach to its collection and analysis.

10. By following the guidelines outlined here, you can ensure that your data is reliable and that your conclusions are well-founded.

11. Thank you for your attention, and please do not hesitate to contact us if you have any questions.