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Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIRST SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2019

Course Name: **BASICS OF ELECTRICAL AND ELECTRONICS ENGINEERING**
PART II: BASIC ELECTRONICS ENGINEERING
(2019-Scheme)

Course Code: EST 130

Duration: 90 min

Max. Marks: 50

PART A*Answer all questions, each carries 4 marks.*

- 1 What are the different types of capacitors? Give any two applications of capacitors.
- 2 Describe the forward characteristics of a diode?
- 3 Draw the block diagram of a public address system and write the role of each block.
- 4 Explain the working of a bridge rectifier. (5x4=20)
- 5 Explain the concept of cells in cellular communication.

PART B*Answer one full question from each module, each question carries 10 marks***Module-IV**

- 6 a) Explain the formation of potential barrier in a PN junction diode. (4)
- b) What do you understand by Avalanche breakdown? Draw and explain the reverse V-I characteristics of a diode. (6)

OR

- 7 Explain the working of an NPN transistor. Describe with suitable sketches the input and output characteristics of an NPN transistor. (10)

Module-V

- 8 a) Draw the circuit diagram of an RC coupled amplifier and explain its frequency response. (6)
- b) Narrate how capacitor filter eliminate ripples from the output of a rectifier. (4)

OR

- 9 a) What is the need of biasing? Draw the potential divider biasing circuit? (4)
- b) Explain the working of a simple zener voltage regulator. (6)

Module-VI

- 10 a) What are the merits of AM compared to FM. The carrier amplitude of a given AM wave is 5V and the message signal amplitude is 3V. Find the modulation index. (5)
- b) Explain the block diagram of a super heterodyne receiver. (5)

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- 11 a) Describe the principle of an antenna. (3)
- b) With necessary block diagram explain the working of a GSM system (7)
