



Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
 B.Tech Degree S1,S2 (S,FE) Examination May 2021 (2015 Scheme)

Course Code: EC100

Course Name: BASICS OF ELECTRONICS ENGINEERING

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks

		Marks
1	What are the specifications of a resistor?	(5)
2	Compare avalanche break down and zener break down.	(5)
3	What is peak inverse voltage (PIV)? Explain the operation of a half wave rectifier.	(5)
4	Explain the operation of an inverting amplifier.	(5)
5	Why geostationary satellites are called so? What are their advantages?	(5)
6	Define frequency modulation. What are the merits of FM?	(5)
7	What are the advantages of optical communication?	(5)
8	Describe the working of a cellular communication system with relevant sketches.	(5)

PART B

Answer six questions, one full question from each module and carries 10 marks.

MODULE I

- 9 a) Which are the different types of capacitors? Mention any two applications of a capacitor. (5)
- b) Explain the construction of a wire wound resistor. (5)

OR

- 10 a) Explain the working of an electromechanical relay. (5)
- b) What are the impacts of electronics in medical field? (5)

MODULE II

- 11 Explain how a PN junction is formed? Draw and explain the VI characteristics of a PN junction diode. (10)

OR

- 12 What is base width modulation? Explain the input and output characteristics of a transistor in CE configuration. (10)

MODULE III

- 13 (a) State Barkhausen criteria. (3)
(b) Explain the working of an RC phase shift oscillator. (7)

OR

- 14 a) Describe the working of a capacitor filter. (4)
b) With a circuit diagram explain the working of a Zener voltage regulator. (6)

MODULE IV

- 15 a) What are the characteristics of an ideal op-amp? (5)
b) Explain the functional block diagram of an op-amp. (5)

OR

- 16 (a) Draw the block diagram of a digital storage oscilloscope and explain its working. (7)
(b) What are universal gates? List them. (3)

MODULE V

- 17 a) Explain the principle and working of a superheterodyne receiver. (5)
b) Compare the performance of an AM and FM communication systems. (5)

OR

- 18 a) What is the need for modulation? Write the equation of modulation index for an AM signal? (5)
b) Describe satellite communication system. (5)

MODULE VI

- 19 a) Using a block diagram, explain the working of an optical fibre communication system. (6)
b) Explain the concept of frequency reuse in cellular communication. (4)

OR

- 20 a) Explain the working of CCTV with suitable diagrams. (5)
b) Explain the operation of cable TV (5)
