Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech S1 (S,FE) S2(S) / S2 (FE) Examination May 2022 (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		Define active and passive components with examples.	(5)
2		Explain the principle of working of an npn transistor.	(5)
3		With the help of a block diagram, explain the working of a public address system.	(5)
4		Draw and explain the functional block diagram of an operational amplifier.	(5)
5		Draw the block diagram of a basic communication system and explain each component.	(5)
6		Describe AM modulation and also give the frequency band for an AM wave.	(5)
7		Describe the basic principle and block diagram of a cable TV system.	(5)
8		Explain the concept of frequency reuse in cellular communication system.	(5)

PART B

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

MODULE I

9	a)	What is the basic working principle of a transformer? List different types of transformers and their applications.	(6)
	b)	Write any four industrial applications of Electronics.	(4)

OR

10	a)	Distinguish different types of inductors based on their construction.	(5)
	b)	Explain the working of an electromechanical relay.	(5)

MODULE II

11		Draw and explain the forward bias and reverse bias characteristics of a PN junction diode.	(10)

OR

12		Explain the input and output characteristics of a common emitter configuration.	(10)

MODULE III

13 a) Explain with the help of neat diagrams, the working of a full wave bridge rectifier. (5)

b) Demonstrate how Zener diode works as a voltage regulator. (5)

OR

14 Draw the circuit diagram of a single stage RC coupled amplifier and explain its working. (10)

MODULE IV

15 a) How NAND gate can be used to realize OR gates? (5)

b) Explain the working of an inverting operational amplifier. (5)

OR

16 With the help of a block diagram. explain the operation of a DSO. (10)

MODULE V

17 a) Draw the block schematics of a super heterodyne receiver and explain its working. (5)

b) Define modulation index. Explain the need for modulation. (5)

OR

18 a) Explain frequency modulation scheme and write its frequency band. (5)

b) What are geostationary satellites? List its advantages. (5)

MODULE VI

19 a) With a neat diagram, explain cellular communication system. (5)

b) Briefly explain the working principle of a Cable TV system. (5)

OR

20 a) Describe the block schematic of an optical communication system and list its advantages. (5)

b) Draw and explain the block schematic of a DTH system. (5)

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