Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S1 (S,FE) S2 (S) Examination May 2022 (2015 Scheme)

Course Code: BE101-04

Course Name: INTRODUCTION TO ELECTRONICS ENGINEERING

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks Marks

1		List the applications of Electronics in industry and explain any one of them.	(5)
2		Describe the working of a solar cell. Give its application.	(5)
3		Explain the structure and typical doping of a bipolar junction transistor.	(5)
4		Compare and contrast JFET with BJT.	(5)
5		Explain the components of a regulated power supply.	(5)
6		Draw the circuit of a positive clamping circuit and explain its working.	(5)
7		With a block diagram explain the working of a DSO.	(5)
8		Define any two performance parameters of an electronic instrument.	(5)

PART B

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

MODULE I

9	a)	Explain the construction of wire wound resistors.	(5)
	b)	State the function of an inductor. Which are the various types of inductors?	(5)

OR

10	a)	Describe the principle of operation of a solid-state relay and compare it with electromechanical relay.	(5)
	b)	Explain the construction of carbon film resistors.	(5)

MODULE II

11		Draw the V-I characteristics of a PN junction diode and explain how barrier potential is generated in a PN junction.	(10)

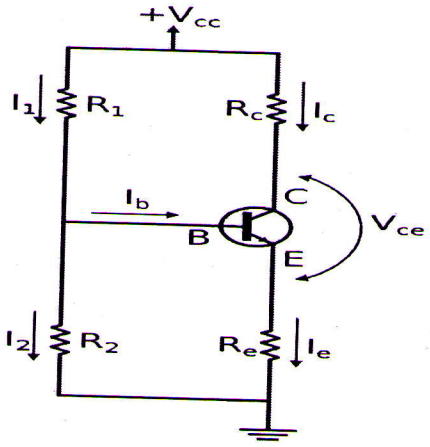
OR

12		Differentiate between intrinsic and extrinsic semiconductors. Explain the formation of N-type semiconductor.	(10)

MODULE III

13 a Explain the need for biasing a BJT. (2)

b Find the values of resistances R1, R2, Rc, Re for a voltage divider biasing circuit. Given Vcc=10V, Ic=1mA , β=100 and VCE=50% of Vcc (8)



OR

14 Draw and explain the circuit diagram and frequency response of an RC coupled amplifier. (10)

MODULE IV

15 With neat sketches explain the working and drain characteristics of an N-channel JFET. (10)

OR

16 a Describe the working of an Enhancement type MOSFET. (6)

b Explain the working of a phototransistor. List its applications (4)

MODULE V

17 Draw the circuit and explain the working of a centre tap full wave rectifier. Derive the Irms, Idc and ripple factor of a centre tap full wave rectifier. (10)

OR

18 Explain the working of a slicer circuit. Draw a circuit to clip a given 10Vpp sine wave at +3V and – 2V. Also draw the input and output waveforms. (10)

MODULE VI

19 Explain the working of an analog multimeter and describe how it can be used for measuring resistance and voltage. (10)

OR

20 a) What are Lissajous patterns? How frequency and phase difference be measured with Lissajous patterns? (5)

b) Explain the working of a function generator. (5)

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