Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
B.Tech Degree S1 (S,FE) S2 (S,FE) Examination May 2024 (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	a)	Find the Colour code of a Resistor 33kΩ± 5%	(2)
	b)	Find the value of resistance with colour code Red, Black, Orange, Silver	(3)
2		Differentiate intrinsic and extrinsic semiconductors.	(5)
3		Explain the input-output characteristics of Common Emitter Configuration of a NPN transistor.	(5)
4		Explain the principle of operation of UJT.	(5)
5		How Zener diode can be used as voltage regulator?	(5)
6		Explain the working of a capacitor filter.	(5)
7		Define Accuracy, Precision, sensitivity, error and resolution of a measuring instrument.	(5)
8		What are the outputs of a function generator? Explain the block diagram of function generator.	(5)

PART B

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

MODULE I

9	a)	What is capacitors? Explain different types of capacitors.	(4)
	b)	What is the working principle of a transformer? Explain different types.	(6)

OR

10	a)	What are self-inductance and mutual inductance? Write expression for both.	(5)
	b)	Explain the working of a relay with proper diagram.	(5)

MODULE II

11	a)	Explain the formation of barrier potential in diodes.	(6)
	b)	What is the use of a photodiode? Explain the principle.	(4)

OR

12	a)	Explain the V-I characteristics of a Silicon Diode.	(5)

b) How LED is different from ordinary diode? Explain the principle of operation of an LED. (5)

MODULE III

13 a) Draw RC coupled amplifier and explain its frequency response curve. (5)

b) Compare the three transistor configurations with respect to input impedance, output impedance, current gain, voltage gain and application. (5)

OR

14 a) What you mean by load line? Explain the significance of Q-point. How will you fix Q-point on load line? (6)

b) Find expression for I_C & V_{CE} in a voltage divider bias. (4)

MODULE IV

15 a) Explain the working of JFET with its characteristics. (7)

b) What are the advantages of FET over BJT? (3)

OR

16 a) Explain the working of Depletion mode MOSFET. (5)

b) Explain the principle of SCR. Mention its applications. (5)

MODULE V

17 Explain the working of a full wave bridge rectifier with neat circuit diagram and derive the expression for ripple factor, PIV and efficiency of each rectifier. (10)

OR

18 a) Draw a circuit which clips the 5V input signal at -2V. (5)

b) Draw and explain the block diagram of a DC power supply. (5)

MODULE VI

19 a) Explain the block diagram of a general measurement system. (6)

b) How Lissajous patterns can be used to identify components? (4)

OR

20 a) How CRO is used to display signals? Explain with block diagram. (6)

b) Explain the block diagram of a DSO. (4)

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