



First/Second Semester B.E./B.Tech. Degree Examination, June/July 2025
Basic Electronics for EEE Stream

Time: 3 hrs.

Max. Marks: 100

- Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
 2. M : Marks, L: Bloom's level, C: Course outcomes.
 3. Assume any missing data suitably.*

Module – 1			M	L	C
Q.1	a.	Explain the forward and reverse characteristics of semiconductor diode.	08	L2	CO1
	b.	Explain positive half wave rectifier with input and output waveforms.	06	L2	CO1
	c.	Explain Zener diode of voltage regulator with no load.	06	L2	CO1
OR					
Q.2	a.	Explain RC π filter.	08	L2	CO1
	b.	What is DC load line? Explain DC load line analysis for semiconductor diode.	08	L2	CO1
	c.	Write down the characteristics of Zener diode.	04	L2	CO1
Module – 2					
Q.3	a.	Explain BJT current amplification for increasing and decreasing IB level.	08	L2	CO2
	b.	Explain common base input characteristics of BJT.	06	L2	CO2
	c.	With a neat diagram explain the working of n channel JFET.	06	L2	CO2
OR					
Q.4	a.	Explain the operation of enhancement MOSFET.	08	L2	CO2
	b.	Draw the DC load line for transistor and identify Q points.	08	L2	CO2
	c.	Describe common emitter input characteristics.	04	L2	CO2
Module – 3					
Q.5	a.	With a neat block diagrams explain the typical op-Amp.	06	L2	CO3
	b.	Explain working of a differential amplifier.	08	L2	CO3
	c.	Explain op-Amp of an integrator circuit with an input and output waveform using square wave of input.	06	L2	CO3
OR					
Q.6	a.	Explain Differentiator with waveform and circuit.	08	L2	CO3
	b.	Define Op-amp parameters Gain, CMRR, Flew rate, input resistance.	08	L2	CO3
	c.	Explain inverting amplifier.	04	L2	CO3

Module – 4

Q.7	a.	Express the Boolean function $F = A + BC$ in a sum of minterms.	06	L2	CO4
	b.	Describe how NAND and NOR gates can be used as universal gates.	08	L2	CO4
	c.	Write down Axiomatic definition of Boolean algebra.	06	L2	CO4

OR

Q.8	a.	Describe the working of the full adder using basic gates.	08	L2	CO4
	b.	Explain SOP and POS with examples.	06	L3	CO4
	c.	Express the Boolean function $F = XY + \bar{X}Z$ in a product of max term.	06	L2	CO1

Module – 5

Q.9	a.	Explain the working of the potentiometer type transducer.	08	L2	CO5
	b.	Write a note on Photodiodes.	06	L2	CO5
	c.	Illustrate the piezoelectric transducer.	06	L2	CO5

OR

Q.10	a.	Explain typical Radio Transmitter with neat block diagram.	08	L2	CO5
	b.	What is modulation? Explain the need for modulation.	06	L2	CO5
	c.	Explain the working of linear variable differential transducer.	06	L2	CO5
