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CBCS SCHEME

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BESCK204C

Second Semester B.E./B.Tech. Degree Examination, June/July 2026
Introduction to Electronics and Communication

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.

		Module – 1	M	L	C
Q.1	a.	Define Rectifier. Explain half wave rectifier with capacitor filter with a neat circuit diagram and relevant waveforms.	10	L1	CO1
	b.	Define the following parameters: i) Gain ii) Input resistance iii) Output resistance iv) Frequency Response v) Bandwidth	05	L1	CO1
	c.	What is Voltage Multiplier? Write circuit diagram and explain the operation of Voltage Tripler.	05	L1	CO1
		OR			
Q.2	a.	With a neat block diagram, explain the working of DC Power Supply.	10	L1	CO1
	b.	What is Feedback System? With a neat diagram explain negative feedback amplifier and also derive the expression for overall gain.	10	L1	CO1
		Module – 2			
Q.3	a.	List the ideal characteristics of OpAmp. With a neat circuit diagram and waveforms explain the operation of non-inverting amplifier.	10	L2	CO2
	b.	With necessary diagram and equation explain the operation of single stage Astable multivibrator using Op-amp.	10	L2	CO2
		OR			
Q.4	a.	State Barkhausen's criteria for sustained oscillations. Explain the operation of Wein Bridge Oscillator with a neat diagram.	08	L2	CO2
	b.	Define slew rate of an Opamp. An OpAmp has an input resistance of 2 MΩ. Solve for the input current when the input voltage of 5 mV is present.	04	L2	CO2
	c.	Explain the operation of a three-stage ladder RC network oscillator.	08	L2	CO2
		Module – 3			
Q.5	a.	Solve the following : i) $(12A.54)_{16} = (?)_8$ ii) $(43.375)_{10} = (?)_2$ iii) $(72532–3250)_{10}$ Using 10's complement iv) $(101011–110111)_2$ Using 1's complement	10	L3	CO3

	b.	List different Huntington Postulates and prove the distributive law for two valued Boolean algebra.	10	L3	CO3
		OR			
Q.6	a.	Explain Half adder using truth table and implement the circuit using logic gates.	10	L3	CO3
	b.	Solve the Boolean function $xy + x^1z + yz$ to a minimum number of literals.	05	L3	CO3
	c.	Implement $f = x^1 y^1 z + x^1 yz + xy^1$ using logic gates.	05	L3	CO3
		Module – 4			
Q.7	a.	What are the elements of the Embedded system? Mention the types of embedded system based on central core with example.	10	L2	CO2
	b.	With suitable block diagram explain control system.	10	L2	CO2
		OR			
Q.8	a.	Explain the different configurations of 7- segment LED display with 8051 microcontroller interface.	10	L2	CO2
	b.	Compare Embedded Systems and general computing systems. List major applications areas of Embedded Systems.	10	L2	CO2
		Module – 5			
Q.9	a.	With a neat block diagram explain the modern communication system.	10	L2	CO2
	b.	Briefly describe the concept of radio wave propagation methods.	10	L2	CO2
		OR			
Q.10	a.	What is Modulation? Explain the Amplitude and Frequency modulation with waveforms.	10	L2	CO2
	b.	With suitable waveforms explain digital modulation schemes.	10	L2	CO2

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