



**Second Semester B.E./B.Tech. Degree Examination, June/July 2025**  
**Introduction to Electronics and Communication**

Max. Marks: 100

- Notes: 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.	With a neat diagram, explain the working of a DC power supply. Also mention the principal components used in each block.	10	L2	CO1	
	b.	With circuit diagram and waveform explain the working of full wave rectifier.	10	L2	CO1	
OR						
Q.2	a.	List and describe the main types of amplifiers.	7	L2	CO1	
	b.	With circuit diagram explain the following voltage doubler, voltage Tripler.	6	L3	CO1	
	c.	Mention the advantage of negative feedback in amplifier circuit with relevant equations and diagram. Explain the concept of negative feedback.	7	L2	CO1	
Module – 2						
Q.3	a.	List and explain the conditions to obtain sustained oscillations. Determine the frequency of oscillations of a 3 stage ladder network in which $C = 10\text{ nF}$ and $R = 10\text{ K}\Omega$ .	10	L3	CO2	
	b.	With circuit diagram and waveform show how operational amplifier can work as a comparator and voltage follower.	10	L3	CO2	
OR						
Q.4	a.	With neat circuit diagram explain the working of Wein Bridge oscillator.	10	L2	CO2	
	b.	Sketch the circuit of each of the following based on the use of operational amplifier. i) Inverting amplifier ii) Differentiator	10	L2	CO2	
Module – 3						
Q.5	a.	Explain with circuit diagram of full adder.	6	L2	CO3	
	b.	Given the two binary numbers $X = 1010100$ and $Y = 1000011$ perform the subtraction i) $X - Y$ ii) $Y - X$ using 2's complement.	6	L3	CO3	
	c.	Convert the following number from the given base to the other bases identified : i) Decimal 225 to binary ii) Binary 11010111 to octal iii) Octal 623 to decimal iv) Hexadecimal 2AC5 to decimal.	8	L2	CO3	
OR						
Q.6	a.	Express the Boolean function $F_1 = A + B'C$ in a sum of minterms form and $F_2 = XY + X'Z$ in a product of maxterms form.	10	L3	CO3	
	b.	Design a full adder using two half address and on OR gate.	10	L3	CO3	
1 of 2						

Module – 4					
Q.7	a.	Compare embedded systems and general computing systems and also provide major application areas of embedded system.	10	L2	CO4
	b.	Bring out the difference between RISC and CISC, microprocessor and microcontrollers.	10	L2	CO4
OR					
Q.8	a.	Draw the basic block diagram of instrumentation and control system. Also explain feedback based control system.	10	L2	CO4
	b.	With neat diagram explain the working of LED and 7 segment display.	10	L2	CO4
Module – 5					
Q.9	a.	With neat diagram explain the basic blocks used in communication system.	10	L2	CO5
	b.	Explain the need for modulation and explain briefly the types of modulations used for communication.	10	L2	CO5
OR					
Q.10	a.	What are the advantages and disadvantages of digital communication over analog communication?	10	L2	CO5
	b.	With neat diagram explain the working of time division multiplexing and frequency division multiplexing.	10	L2	CO5

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