R22 Regulation *Subject code: 4E4DD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech IV Semester Supplementary Examinations, December 2024

LINEAR AND DIGITAL IC APPLICATIONS

(ECE)

Maximum Marks: 60 Date:10.12.2024 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

	Part-A	CO	Bloom Tx
All the following questions carry equal marks (10X1M=10 Marks)			
1.a)	Define slew rate.	CO1	L1
b)	Draw the substractor circuit using Op-amp 741.	CO1	L3
c)	List the basic blocks of IC 555 timer.	CO2	L4
d)	Define cut off frequency of a filter.	CO2	L1
e)	Define lock range.	CO3	L1
f)	What are the main advantages of integrating type ADCs?	CO3	L1
g)	With the help of truth table, explain 8*3 encoder.	CO4	L3
h)	Write the sinking current of TTL output?	CO4	L2
i)	Write a short note on PISO register	CO5	L1
j)	Classify different types of RAMs.	CO5	L2
	Part-B		
Answer All the following questions. (5X10M=50Marks)			Bloom Tx level
2	Draw and analyze the integrator circuit using op-amp 741. [10M]	CO1	L3
	OR		
3	Derive the gain for non-inverting op-amp. [10M]	CO1	L3
4	Draw the circuit of a 1st order low pass filter and derive its transfer function. [10M]	CO2	L3
	OR		
5	Draw and explain the operation of Monostable Multivibrator using 555. [10M]	CO2	L4
6	Explain the blocks present in 565 with neat sketches. [10M]	CO3	L2
	OR		
7	Explain the working of a dual slope A/D converter. [10M]	CO3	L2
8	Design an AND gate using TTL open collector output. [10M]	CO4	L5
	OR		

9	A) Explain the operation of Binary to Gray code converter. [5M] B) With the help of truth table, illustrate the operation of Priority Encoder. [5M]	CO4	L2 & L3
10	Design synchronous up counter using flip-flops. [10M]	CO5	L2
	OR		
11	List and explain different types of ROMs. [10M]	CO5	L3