R20 Regulation *Subject code:3P4DD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech IV Semester Supplementary Examinations, February 2024

Linear IC Applications

(Electronics and Communication Engineering)

Maximum Marks: 70 Date: 23.02.2024 Duration: 3 hours

Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

	All the following questions carry equal marks (10x2M=20 Marks)	CO	Bloom Tx
1	List the advantages of integrated circuits over discrete component circuits.	CO1	L1
2	What is an Op-amp?	CO1	L1
3	Define summing amplifier.	CO2	L1
4	What are the important features of Instrumentation amplifier?	CO2	L1
5	Discuss the disadvantages of passive filters.	CO3	L2
6	Why do we use higher order filters?	CO3	L1
7	Define Duty cycle D.	CO4	L1
8	Define Capture range.	CO4	L1
9	List the various A/D conversion Techniques	CO5	L1
10	What are the essential parts of DAC?	CO5	L1

Part-B

	Answer All the following questions. (5X10M=50Marks)		
11	a) List out the features of ideal OP-Amp. 3M b) Explain the Non- Inverting Operational Amplifier with neat diagram? 7M	CO1	L1 L2
	OR		
12	Classify ICs on the basis of application, device used and chip complexity. 10M	CO1	L2
13	Explain the operation of OP- Amp as an Integrator with neat diagrams. 10M	CO2	L2
	OR		

14	Draw the circuit diagram of Instrumentation amplifier and explain its operation with neat sketch. 10M	CO2	L2
15	Design a first order Butterworth HPF with a neat sketch. 10M	CO3	L2
	OR		
16	How to generate a Saw tooth waveform? Explain the working of such a circuit with a neat circuit diagram. 10M	CO3	L2
17	Draw the block diagram of IC565 and explain its operation. 10M	CO4	L2
	OR		
18	Explain lock range and capture range in detail. 10M	CO4	L2
19	Draw and explain the circuit diagram of parallel comparator type ADC. 10M	CO5	L2
	OR		
20	Explain the operation of Dual – Slop ADC with neat diagram. 10M	CO5	L2