

ANURAG Engineering College

(An Autonomous Institution)

III B. Tech I Semester Supplementary Examinations, June/July – 2024

LINEAR AND DIGITAL IC APPLICATIONS

(COMMON TO EEE & ECE)

Time: 3 Hours**Max. Marks: 75****Section – A (Short Answer type questions)****(25 Marks)****Answer All Questions**

	Course Outcome	B.T Level	Marks
1. List two features of Op-Amp741.	CO1	L1	2M
2. What are the applications of Comparator.	CO1	L2	3M
3. Identify any two applications of 555 timer.	CO2	L1	2M
4. Define Phase Locked Loop.	CO2	L1	3M
5. Show the block diagram of Counter type ADC.	CO3	L2	2M
6. List types of Analog to digital converters.	CO3	L1	3M
7. Identify best type Flip Flops suitable for Asynchronous counters.	CO4	L1	2M
8. What is the characteristics table of D Flip Flop.	CO4	L2	3M
9. What is a multiplexer?	CO5	L1	2M
10. Draw the logic symbol of 4 X 1 Multiplexer.	CO5	L1	3M

Section B (Essay Questions)**Answer all questions, each question carries equal marks.****(5 X 10M = 50M)**

11. A) Develop a second order low pass filter to have higher cut-off frequency of 2 kHz.	CO1	L3	10M
OR			
B) i) List the various DC and AC characteristics of an OP-AMP	CO1	L2	5M
ii) Explain pole zero compensation and frequency compensation in OP-AMP.	CO1	L2	5M
12. A) Interpret the operation of 555 timer using functional diagram.	CO2	L2	10M
OR			
B) Illustrate Astable multivibrator and mark all relevant waveforms.	CO2	L2	10M
13. A) Model Successive approximation ADC using circuit diagram and explain.	CO3	L3	10M
OR			
B) For the R-2R DAC, the V_R is 4V, R_f is 8 K Ω and R is 4K Ω and digital input word is 1110, calculate the output voltage.	CO3	L3	10M
14. A) Design three bit Binary to gray code converter.	CO4	L3	10M
OR			
B) Summarize the operation of 3 bit Ripple up counter using JK Flip flops.	CO4	L2	10M
15. A) Analyze and implement a Half adder operation using 2 X 4 Decoder.	CO5	L3	10M
OR			
B) Summarize the operation of SISO shift register with neat sketches using D flip flops.	CO5	L2	10M