



R18 Regulation

Subject code: 2P4DD

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech IV Semester Supplementary Examinations, September 2023

Linear and Digital IC Applications

(ECE)

Maximum Marks: 70

Date: 24.09.2023 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.
 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)

- 1 List features of 741 op-amp.
- 2 Mention the characteristics of an ideal op-amp.
- 3 What is the significance of VCO in PLL?
- 4 Differentiate between active and passive filters.
- 5 What do you mean by quantization error in an ADC?
- 6 Mention the advantages of R-2R ladder DAC.
- 7 Define noise margin and propagation delay.
- 8 What is a mean by a combinational circuit?
- 9 How to convert JK flipflop to D flipflop?
- 10 Explain about different types of ROM'S?

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 Explain the operation of practical differentiator and draw output waveforms for various inputs. (10M)
OR
- 12 Draw and explain the inverting op-amp in detail. (10M)
- 13 Explain triangular waveform generator using IC 741 and derive frequency of oscillations. (10M)
OR
- 14 Explain the monostable operation of the 555 timer and derive the expression for the period of a pulse generated by the Timer (10M)
- 15 Draw the circuit diagram of R-2R ladder DAC and explain its operation. (10M)
OR
- 16 Explain the principle of operation of Successive Approximation ADC. (10M)
- 17 Design a 5 to 32line decoder using 3 to 8line decoder; active low outputs with 2 active low and one active high enable. (10M)

- OR
- 18 Explain with neat diagram interfacing of TTL gate driving CMOS and CMOS driving TTL Gates. (10M)
- 19 Differentiate between ripple counter and synchronous counter? Design a 3- bit synchronous counter. (10M)
- OR
- 20 a. Explain read and write operations of DRAM. (5M)
b. Compare PROM, PLA and PAL. (5M)