



R20 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

Subject code: 3P4DD

B.Tech IV Semester Regular/Supplementary Examinations, September 2023

Linear IC Applications
(Electronics and Communication Engineering)

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 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)

- 1 Draw the symbol of OP-Amp.
- 2 What is an Op-amp?
- 3 Define differentiator amplifier.
- 4 What are the important features of Instrumentation amplifier?
- 5 What is a band reject filter?
- 6 Why do we use higher order filters?
- 7 Name the basic blocks in PLL.
- 8 Define Capture range.
- 9 List the various DAC conversion Techniques.
- 10 What are the essential parts of ADC?

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 Explain the Non- Inverting Operational Amplifier with neat diagram? 10M
- OR
- 12 Explain the OP-Amp Ideal characteristics and applications. 10M
 - 13 Sketch Schmitt trigger using Op-Amp and explain its characteristics. 10M
- OR
- 14 Explain the operation of a current to voltage converter 10M
 - 15 Design a first order Butterworth HPF operating at a frequency of 4 KHz with a passband gain of 2. 10M
- OR
- 16 How to generate a Traingular waveform? Explain the working of such a circuit with a neat circuit diagram. 10M

- 17 Construct an Astable operation of IC555 with necessary waveforms and explain in detail. 10M
- OR
- 18 Explain the terms frequency multiplication, frequency translation of PLL. 10M
- 19 Explain the operation of R -2R ladder DAC with necessary diagrams . 10M
- OR
- 20 List and explain the specifications of DAC. 10M