

School of Engineering

**B.TECH Electronics and Communication Engineering in Artificial Intelligence and Machine
Summer Term Examination – July - August 2024**

**Duration : 180 Minutes
Max Marks : 100**

Sem IV - G2UA401B - Integrated Circuits

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Write in brief the quadrant operation of multiplier? K1(2)
- 2) Explain in brief the difference between direct ADC and integrating type ADC. K2(4)
- 3) Illustrate the applications of Multiplier Ics. K2(6)
- 4) Design an op amp circuit with inputs v_1 and v_2 such that $v_o = -5v_1 + 3v_2$. K3(9)
- 5) What output voltage would be produced by a D/A converter whose output range is 0 to 10V and whose input binary number is 10111100 (for a 8 bit DAC)? K3(9)
- 6) What criteria should be kept in mind while selecting any ADC. K5(10)
- 7) Analyze the importance of switched capacitor filter circuits. K4(12)
- 8) Using Op-amps circuit examine the operation of Zero cross Detector. K5(15)
- 9) Assess the working of IC 555 Timer with its internal block diagram. K5(15)
- 10) Design a simple difference amplifier with an input impedance of 10 k Ω per leg, and a voltage gain of 26 dB. K6(18)