



QP CODE: 24027334



Reg No :

Name :

**B.Sc DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE
EXAMINATIONS, OCTOBER 2024**

Third Semester

Core Course - EL3CRT07 - ANALOG ICS AND APPLICATIONS

Common to B.Sc Electronics and Computer Maintenance Model III, B.Sc Electronics Model III

2017 Admission Onwards

EEB0D125

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. Briefly explain the development of linear ICs.
2. Explain the significance of CMRR of an op-amp.
3. Explain the frequency response of an op-amp.
4. Obtain an expression for the closed loop voltage gain of an inverting amplifier.
5. What are the applications of instrumentation amplifier?
6. What are op-amp comparators?
7. Give the circuit of a phase shift oscillation and mention the expression for frequency of oscillation.
8. What is a square wave oscillator?
9. What are the applications of saw-tooth wave generator?
10. What are the applications of 555 timer IC?
11. What is monostable multivibrator?
12. What are the applications of PLL?

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*





13. Explain scale of integration of ICs.
14. Explain the various IC package types with pin identification.
15. Explain the features of IC741.
16. Compare ideal and practical op amp.
17. Design an op-amp differentiator circuit to differentiate an input signal that varies in frequency from 10 Hz to about 1KHz. Let $C_1 = 0.1$ micro farad.
18. Design a schmitt trigger using op amp with a LTP = -3V and UTP = 3 V. Assume $+V_{sat} = +14$ V and $-V_{sat} = -14$ V.
19. Draw and explain the circuit of a Wien bridge oscillator using op-amp.
20. Using 7805 C voltage regulator design a current source that will deliver a 0.25 A current to a 48 ohm 10 W load.
21. Explain special voltage regulators.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Carry out the DC Analysis of a dual input unbalanced output differential amplifier.
23. Explain the block diagram representation of a typical operational amplifier. Explain the blocks.
24. With neat circuit diagrams explain the working of summing, scaling, averaging amplifiers.
25. What do you mean by Voltage controlled oscillator? Explain VCO using IC 566.

(2×15=30)

