23106347

QP CODE: 23106347

Reg No : .................

Name : .................

# B.Sc DEGREE (CBCS) IMPROVEMENT / REAPPEARANCE EXAMINATIONS, MARCH 2023

## Fourth Semester

B.Sc Physics Model II Applied Electronics

## Vocational Course - AE4VOT07 - LINEAR INTEGRATED CIRCUITS

2017 Admission Onwards

48DAF9E5

Time: 3 Hours

Max. Marks : 60

### Part A

*Answer any **ten** questions.*

*Each question carries **1** mark.*

1. Draw the pin configuration of Op-amp.
2. Draw the frequency response curve of IC741 in open loop configuration.
3. Draw the circuit diagram of inverting amplifier in open loop configuration.
4. What do you mean by non-inverting input?
5. Draw the circuit of comparator.
6. What is high impedance voltmeter?
7. How +ve and -ve feed back is obtained in Wien Bridge oscillator?
8. What are the different types of filters?
9. Explain control voltage and threshold of IC-555.
10. What are the applications of 555 Timer?
11. Draw the wave forms of fin, fout and output of an edge-triggered phase detector.
12. What do you mean by Pull-in-time?

(10×1=10)

## Part B

*Answer any **six** questions.*

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

13. Explain any five parameters of op-amp.

14. For the inverting amplifier given that R1=1kΩ and Rf=10kΩ. Assuming an ideal amplifier, calculate the output voltage for the input of 1V.

15. Show how can an operational amplifier be used as an adder?

16. Draw the subtractor circuit using Op-amp and mention its applications.

17. With the help of circuit diagrams explain the working of an integrator. Derive the expression for the output voltage. Draw also the frequency response curve of an integrator.

18. With the help of a circuit diagram explain the working of a square wave relaxation oscillator.

19. Explain the use of IC-555 timer as a pulse stretcher.

20. Draw the functional diagram of astable multivibrator.

21. Draw the circuit diagram and explain the working of a Voltage controlled oscillator using IC555.

(6×5=30)

## Part C

*Answer any **two** questions.*

*Each question carries **10** marks.*

22. Explain the significance of the name op-amp. Draw the block diagram of operational amplifier and explain it in detail.

23. Explain the working of Colpitt's oscillator and Crystal oscillator.

24. With the help of a circuit diagram and associated wave forms describe the working of basic triangular square wave generator using Op-amps.

25. With a neat diagram, explain bistable multivibrator using IC-555.

(2×10=20)