21102881

QP CODE: 21102881

Reg No : ....

Name : ....

B.Sc DEGREE (CBCS) EXAMINATIONS, OCTOBER 2021

Fourth Semester

B.Sc Physics Model II Applied Electronics

Vocational Course - AE4VOT07 - LINEAR INTEGRATED CIRCUITS

2019 Admission only

37059E13

Time: 3 Hours — Max. Marks : 60

Part A

*Answer any **ten** questions.*

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

1. Draw the block diagram of operational amplifier.
2. An IC has the designation UA741C, what does it mean?
3. Why in frequency response curve frequency is plotted on a logarithmic scale?
4. Name the open loop configurations of IC 741.
5. Draw the circuit of comparator.
6. What do you mean by oscillator?
7. What is crystal oscillator?
8. Draw the frequency response of band pass filters.
9. Draw the pin configuration of IC-555.
10. What do you mean by PLL?
11. Which type of phase detector is used if fin and fout are pulse waveforms?
12. What do you mean by capture range?

(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=10kΩ and Rf=100kΩ. Assuming an ideal amplifier, calculate the output voltage for the input of 10V.

15. For the non-inverting amplifier given that input voltage is 5V and R1=1kΩ and Rf=5kΩ. Calculate the output voltage.

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

17. With the help of a circuit diagram explain the working of a differentiator. Derive the expression for the output voltage.

18. Draw the circuit diagram and explain the working of a Triangular wave oscillator.

19. Explain the use of IC-555 timer as a frequency divider.

20. What is duty cycle? Obtain an equation of duty cycle for astable operation.

21. Draw the circuit diagram of Bistable multivibrator using IC55 and explain its working.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Draw the circuit diagram and derive the expression for the output voltage of a four input inverting summing amplifier. Modify the resistor values and make it an averaging amplifier.

23. Explain the Wein bridge oscillator in detail.

24. Draw the neat circuit diagrams of (a) first order and (b) second order, high pass filters using Op-amp and describe it. Draw and compare the frequency response curves.

25. With a neat diagram, explain Monolithic Phase-Locked Loops.

(2×10=20)