QP CODE: 24027769

24027769

Reg No : .....

Name : .....

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

Third Semester

B.Sc Physics Model I

COMPLEMENTARY COURSE - EL3CMT03 - ELECTRONICS - OPERATIONAL AMPLIFIERS, COMMUNICATION ELECTRONICS AND INTEGRATED CIRCUITS

2017 Admission Onwards

46864152

Time: 3 Hours Max. Marks : 60

Part A

*Answer any **ten** questions.*

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

1. Draw the circuit diagram of inverting amplifier using opamp.
2. For a differential amplifier with one opamp, what is value of voltage gain?
3. What is the typical value of Gain Bandwidth product of 741C opamp?
4. Draw the frequency spectrum of AM wave.
5. How much is the total modulation index for two signals with modulation index of 0.5 and 0.4?
6. Draw the circuit of amplitude modulator using transistor.
7. What is detector circuit?.
8. What is the function of mixer stage in superheterodyne radio receiver?
9. What is interlaced scanning.?
10. Which are two types of electrodes in LCD TV?
11. Compare the viewing angle of LCD and plasma.
12. Why IC is having increased speed over discrete circuit ?

(10×1=10)

Part B

*Answer any **six** questions.*

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

13. Explain the block diagram representation of a typical opamp.
14. Explain the adder circuit in inverting configuration and derive the output voltage gain as summing amplifier, scaling amplifier and averaging amplifier.

15. Design a square wave generator circuit to produce an output waveform of Time period of 1ms and draw the output voltage waveform and voltage across capacitor.

16. Draw and explain comparator circuit with Vin= 10Vpp and Vref = 2V.

17. What are AM radio receivers and the functions performed by the AM Radio receiver?

18. Explain PPM and list out the advantages and disadvantages.

19. Explain Monochrome TV receiver.

20. Explain the basic features of Thick film and Thin film technology.

21. Explain the diffusion process and metallisation process in Planar Process.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Explain Integrator circuit using opamp.Draw the practical integrator circuit.

23. Explain the Frequency modulation and compare AM and FM.

24. Explain (i) Sampling theroem .(ii) pulse code modulation.

25. Explain the steps in Fabrication of monolitihic bjt transistor.

(2×10=20)