October 2018

Time – Three hours
(Maximum Marks: 75)

[N.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory. Answer any FOUR questions from the remaining in each PART – A and PART – B

(2) Answer division (a) or division (b) of each question in PART – C.

(3) Each question carries 2 marks in PART – A, 3 marks in Part – B and 10 marks in PART – C.]

PART – A

1. What is the difference between sign changer and scale changer?

2. What is voltage to current converter?

3. Define capture range.

4. Define sampling.

5. Write one advantage and one disadvantage of flash type ADC.

6. Write the output ON time duration of a monostable multivibrator.

7. Define voltage regulator.

8. Define slew rate.

PART – B

9. Draw the symbol of Op.Amp and pin diagram of Op.Amp IC 741.

10. Write the characteristics of ideal Op.Amp.

11. Draw the comparator diagram using Op.Amp and draw its characteristics.

12. What is frequency translation?

13. Explain quantization.

14. Draw the pin diagram of IC LM723.

15. Explain linear fixed voltage regulators.

16. Explain resolution in DAC and ADC.

[Turn over.....

PART – C

17. (a) Draw the equivalent circuit of Op.Amp and explain virtual ground.

    (Or)

    (b) Draw the differential amplifier diagram using Op.Amp and derive the output voltage equation.

18. (a) Explain how Op.Amp is used to get the integration and differentiation of input signal.

    (Or)

    (b) With neat diagram, explain the operation of triangular wave generator using Op.Amp.

19. (a) Briefly explain the basic components of PLL.

    (Or)

    (b) Draw the block diagram of VCO566 and explain each block.

20. (a) Explain the working of dual slope ADC.

    (Or)

    (b) With a neat diagram, explain the operation of IC ADC0808.

21. (a) Draw the function block diagram of IC555 and explain each block.

    (Or)

    (b) Explain positive voltage regulators and negative voltage regulator using IC 78XX and IC 79XX.

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