592   Register No.: [   ]

April 2018

<u>Time – Three hours</u>
(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. Draw the pin diagram of IC 741.

2. Mention the types of waveform generator using Op. Amp.

3. Draw the circuit diagram of zero cross detector.

4. List out the basic components of PLL.

5. State any two applications of PLL.

6. Define monotonocity in DAC.

7. Draw IC 78xx regulator.

8. Define CMRR and slew rate.

PART – B

9. List the advantages of IC's over discrete components.

10. What is voltage follower? Explain.

11. Explain the working of summing amplifier.

12. Define capture range and lockin range and pullin time.

13. Draw basic block diagram of VCO 566.

14. Define resolution and accuracy of DAC.

15. Explain sample and hold circuit.

16. Draw the pin diagram of IC 555 timer.

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PART – C

17. (a) (i) Draw the block diagram of an Op. Amp. and explain.
    (ii) Explain virtual ground.

    (Or)

    (b) Explain inverting amplifier and non-inverting amplifier using Op. Amp.

18. (a) Explain the operation of Op. Amp. as instrumentation amplifier with diagram.

    (Or)

    (b) Explain the operation of Op. Amp. as square wave generator with diagram.

19. (a) Explain the frequency translation and frequency multiplication using PLL with diagram.

    (Or)

    (b) Explain the pin and block diagram of VCO 566 with diagram.

20. (a) Draw the circuit diagram of R-2R ladder D/A converter and explain its operation.

    (Or)

    (b) Explain the successive approximation type analog to digital converter with its diagram.

21. (a) Explain the operation of monostable multivibrator with its circuit diagram.

    (Or)

    (b) Explain the operation of LM723 as low voltage regulator with its circuit diagram.

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