Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code: 34402

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Fourth Semester

Electronics and Communication Engineering

01UEC402 – ANALOG CIRCUITS

(Regulation 2013)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. What are the essential conditions for maintaining oscillations?

2. Draw the circuit of Armstrong oscillator and mention its application.

3. Compare clipper and clamper.

4. Draw the circuit diagram of diode clippers.

5. Give the ideal characteristics of op-amp.

6. Define slew rate.

7. List the applications of PLL.

8. Give the schematic of Op-Amp based sine wave to square wave converter.

9. Define time constant.

10. Define resolution of a converter.

PART - B (5 x 16 = 80 Marks)

11. (a) Draw the circuit of Hartley Oscillator and explain its working. Derive the expressions for frequency of oscillation and condition for starting of oscillations. (16)

Or

(b) Explain in detail the construction and working principle of RC phase shift oscillator and derive the expression for frequency of oscillation in it. (16)

12. (a) Explain the working of monostable multi vibrator using BJT with relevant waveforms. Derive the expression for varying its pulse width at the output. (16)

Or

(b) Draw the circuit diagram of collector coupled astable multivibrator and illustrate its operation with relevant waveforms. (16)

13. (a) Explain the steps involved in the manufacturing process of an IC. (16)

Or

(b) Enumerate the ac characteristics of op-amp. (16)

14. (a) Draw and explain the operation of phase shifter circuit with necessary expressions. (16)

Or

(b) What is an instrumentation amplifier? With a neat diagram explain the working of an instrumentation amplifier whose gain can be set by a gain setting resistor. (16)

15. (a) Explain the successive approximation and dual slope A/D converters in detail. (16)

Or

(b) Draw the pin configuration and functional diagram of a 555 timer. Explain the functional diagram. (16)

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