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Question Paper Code: 44402

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Fourth Semester

Electronics and Communication Engineering

14UEC402 - ANALOG CIRCUITS

(Regulation 2014)

Duration: 1:15hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Sinusoidal oscillators operate with _____ feedback
(a) Positive (b) Negative
(c) Both a and b (d) None of the above
2. _____ is the oscillator that has highest frequency stability.
(a) Hartley (b) Colpitts (c) Clapp (d) Crystal
3. Free running oscillator is also called as _____ multivibrator.
(a) Astable (b) Bistable (c) monostable (d) blocking
4. _____ Circuit is used to restore dc value to the input signal.
(a) clamper (b) clipper (c) recitifier (d) integrator
5. The open loop gain of an ideal Op amp is
(a) infinite (b) finite (c) zero (d) unity
6. _____ means growing single crystal silicon structure upon a original silicon substrate.
(a) Etching (b) Epitaxy (c) Ion implantation (d) Diffusion

7. _____ is a nonlinear application of operational amplifier.
(a) Adder (b) Subtractor (c) Differentiator (d) Comparator
8. Precision rectifier are used to rectify voltages in range of _____ volts.
(a) milli (b) kilo (c) mega (d) giga
9. Which of the following circuits use operational amplifiers as an active device?
(a) Oscillator circuit (b) Phase Locked Loop
(c) Active filter circuits (d) All the above
10. A flash type ADC requires _____ comparators for an n -bit conversion.
(a) $1-2^n$ (b) 2^n+1 (c) $2^n -1$ (d) 2^n

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain the operation of RC phase shift oscillator with a neat circuit diagram and derive the expression of frequency of oscillation and the condition for sustained oscillation. (8)
12. Describe the response of low pass RC circuit for step and square wave input. Sketch the circuits and waveforms. (8)
13. Discuss the various ways to fabricate diodes. (8)
14. Explain the working of PLL with neat block diagram and derive the expression for lock in range and capture range. (8)
15. Draw and explain the functional block diagram of a 723 regulator. (8)