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Question Paper Code: 34402

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

Fourth Semester

Electronics and Communication Engineering

01UEC402 – ANALOG CIRCUITS

(Regulation 2013)

Duration: 1:15hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

- Sinusoidal oscillators operate with _____ feedback
 - Positive
 - Negative
 - Both a and b
 - None of the above
- _____ is the oscillator that has highest frequency stability.
 - Hartley
 - Colpitts
 - Clapp
 - Crystal
- Free running oscillator is also called as _____ multivibrator.
 - Astable
 - Bistable
 - monostable
 - blocking
- _____ Circuit is used to restore dc value to the input signal.
 - clammer
 - clipper
 - recitifier
 - integrator
- The open loop gain of an ideal Op amp is
 - infinite
 - finite
 - zero
 - 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 in detail the construction and working principle of RC phase shift oscillator and derive the expression for frequency of oscillation in it. (8)
12. Sketch a Schmitt trigger and explain its operation with necessary diagram. (8)
13. Explain in details the step by step procedure for manufacturing process of monolithic bipolar transistor. (8)
14. Draw and explain the operation of phase shifter circuit with necessary expressions. (8)
15. Explain the single and dual slope type ADC with neat block diagrams. (8)