Reg. No. : | | | | | | | | | | |

Question Paper Code: 54402

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020
Fourth Semester
Electronics and Communication Engineering
15UEC402–ANALOG CIRCUITS
(Regulation 2015)

Duration: One hour Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Which of the following oscillators is suitable for measuring frequencies in the range of Mega Hertz? CO1- R
   (a) RC phase shift (b) Wien bridge (c) Hartley (d) Both (a) and (c)

2. Identify the frequency range of Very high frequency oscillator. CO1- R
   (a) 30MHz-300MHz (b) 20MHz-30MHz (c) 300MHz-3GHz (d) 30MHz-3GHz

3. Clock for binary logic signals are generated using _____ Multivibrator. CO2- R
   (a) Monostable (b) Univibrator (c) Bistable (d) Astable

4. If an astable multivibrator has $C_1 = C_2 = 1000$ pF and $R_1 = R_2 = 20$ KΩ, calculate the frequency of oscillation CO2- R
   (a) 2.25 KHz (b) 22.5 KHz (c) 3.625 KHz (d) 36.25 KHz

5. Most of the linear Ic's are based on the two-transistor differential amplifier because of its CO3- R
   (a) Input voltage-dependent linear transfer characteristics
   (b) High voltage gain
   (c) High input resistance
   (d) High CMRR

6. Most difficult to fabricate in an IC is CO3- R
   (a) Diode (b) FET (c) Capacitor (d) Transistor

7. _____ Instrument is used to amplify output signal of transducer. CO4- R

(a) Integrator (b) Differential amplifier (c) PLL (d) Instrumentation amplifier

8. A PLL can be used to demodulate CO4- R

(a) An AM signal (b) A DSB SC signal (c) A SSB signal (d) A FM signal

9. The most commonly used amplifier in sample and hold circuit is CO5- R

(a) A unity gain non-inverting amplifier

(b) A unity gain inverting amplifier

(c) An inverting amplifier with a gain of 10

(d)An inverting amplifier with a gain of 100

10. Sample and Hold circuit is used in CO5- R

(a) Amplifier (b) ADC (c) Multiplexer (d) DAC

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain the operation of Hartley oscillator and derive an equation for frequency of oscillation with neat and necessary diagrams CO1- U (8)

12. What is clipper and clamper circuit and list their types also explain the working principle of any one type from each with neat circuit diagram and waveforms. CO2- U (8)

13. Explain the general construction and manufacturing process of monolithic ICs with necessary diagrams. CO3- U (8)

14. Explain the construction and operation of an Instrumentation amplifier CO4- U (8)

15. Explain the working principle of following basic D/A converter techniques, CO5- U (8)
    (i) Weighted Resistor type
    (ii) R-2R Ladder type

54402