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**Question Paper Code:54402**

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

Fourth Semester

Electronics and Communication Engineering

15UEC402–ANALOG CIRCUITS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5x 1 = 5 Marks)

1. Which among the following parameters acts as an initiator for the operation of an oscillator in the absence of input signal? CO1- R  
(a) Noise voltage      (b) Noise power      (c) Noise temperature      (d) Noise figure
2. Bistable circuit is also known as CO2- R  
(a) latch      (b) flip flop      (c) amplifier      (d) buffer
3. ICs are generally made of \_\_\_\_\_ CO3- R  
(a) Silicon      (b) Germanium      (c) Copper      (d) None of the above
4. In VCO IC 566, the value of charging & discharging is dependent on the voltage applied at \_\_\_\_\_. CO4- R  
(a) Triangular wave output      (b) Square wave output  
(c) Modulating input      (d) All of the above
5. Which of the following is a type of error associated with digital-to-analog converters (DACs)? CO5- R  
(a) incorrect output codes      (b) nonmonotonic error  
(c) offset error      (d) nonmonotonic and offset error

PART – B (5 x 3= 15Marks)

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|-----|---|--------|
| 6.  | State Barkhausen Criterion.             | CO1- R |
| 7.  | Draw the structure of positive clamper. | CO2- R |
| 8.  | List out the advantages of ICs          | CO3- R |
| 9.  | Define PLL.                             | CO4- R |
| 10. | Draw the structure R-2R ladder.         | CO5- R |

PART – C (5 x 16= 80Marks)

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|-----|--|----------|------|
| 11. | (a) Calculate the general condition for oscillation for a LC oscillator and derive the frequency of oscillation for colpitts oscillator. | CO1- App | (16) |
|     | Or   |          |      |
|     | (b) Illustrate the Wien bridge oscillator with neat sketch.  | CO1- App | (16) |
| 12. | (a) Demonstrate the operation of emitter coupled Astable Multivibrator.  | CO2- App | (16) |
|     | Or   |          |      |
|     | (b) Illustrate the Triggering methods for Bistable multivibrators.   | CO2- Ana | (16) |
| 13. | (a) Explain in detail about the Manufacturing process of monolithic ICs.   | CO3- Ana | (16) |
|     | Or   |          |      |
|     | (b) Explain in detail about the internal circuit of IC 741 with its characteristics.   | CO3- Ana | (16) |
| 14. | (a) Discuss in detail about the applications of operational amplifiers.  | CO4- U   | (16) |
|     | Or   |          |      |
|     | (b) Explain in detail about the operation of PLL.  | CO4- Ana | (16) |
| 15. | (a) Discuss in detail about the D/A converter.   | CO5- U   | (16) |
|     | Or   |          |      |
|     | (b) Discuss in detail about the Multivibrators using Timer IC 555.   | CO5- U   | (16) |