Q.P. Code: 16EC411 **R16**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech II Year II Semester Supplementary Examinations July-2021

Analog Electronic Circuits

(Electrical and Electronics Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1 Draw the block diagram of CE-CC cascaded amplifier and analyze its various parameters. **12M**

OR

2 Let us consider the two stage amplifier, the first stage in the circuit is a CE amplifier and second stage is CC amplifier, calculate R_i, A_i, A_v, R_i', A_{vs} and A_{is} if circuit parameters are: R_s=1K, R_{c1} = 3.3K, R_{E2}= 4.7kΩ.Assume that h_{ie}= 2k, h_{fe} = 50, h_{re} =0 and h_{oe} =0. **12M**

UNIT-II

3 Derive the expressions of input and output resistances for Voltage Shunt Feedback amplifiers. **12M**

OR

4 **a** Give the detailed analysis of Current Series feedback amplifier. **7M**

b Calculate the gain, input impedance and output impedance of voltage series feedback Amplifierhaving gain A = -300, R_{in}= 1.5 kΩ and R_{out}= 50 kΩ, β = 0.05. **5M**

UNIT-III

5 **a** Draw the circuit diagram of RC phase shift Oscillator and Explain its working. **6M**

b Explain the concept of frequency stability of Oscillators. **6M**

OR

6 **a** Draw the circuit diagram of Colpitts oscillator and explain its working. **7M**

b Find the frequency of the oscillations of a transistorized Colpitts oscillator having C_1 = 150 pF,C_2 = 1.5nF and L = 50 μH . **5M**

UNIT-IV

7 **a** Draw the circuit diagram of push pull class B amplifier and explain its working principle. **7M**

b Write short note on power output and efficiency of class A power amplifiers. **5M**

OR

8 **a** Draw the circuit diagram of complementary symmetry class B amplifier and explain itsworking principle. **7M**

b For a transistor, Tj = 160^0c, T_A = 40^0c, and Θ_{j-A} = 80^0c/W. Calculate the power that thetransistor can safely dissipate in free air. **5M**

UNIT-V

9 **a** How High pass RC circuit be used as a Differentiator. **6M**

b Derive the Response of a low pass RC circuit for Step input. **6M**

OR

10 **a** With help of diagram explain the operation of Bi-stable Multivibrator. **6M**

b Explain the positive clamper circuit with wave forms. **6M**

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