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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech II Year II Semester Supplementary Examinations Dec 2019

ANALOG ELECTRONIC CIRCUITS

(Electrical & Electronics Engineering)

Time: 3 hours

Max. Marks: 60

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

UNIT-I

- 1 Draw the circuit diagram of two stage RC coupled transistors amplifiers. Explain the operation and calculate the mid frequency range and low frequency range. 12M

OR

- 2 a Explain the calculation of band width of single and multi stage amplifier. 7M
b Derive the expression for voltage gain of cascade amplifier. 5M

UNIT-II

- 3 a Derive the expression for gain, input resistance and output resistance for voltage series feedback amplifier. 8M
b A voltage series negative feedback amplifier has a voltage gain without feedback of $A=50$, input resistance $R_i=2K\Omega$, output resistance $R_o=15K\Omega$ and feedback ratio of 0.01. Calculate the voltage gain, input resistance and output resistance of the amplifier with feedback? 4M

OR

- 4 a Explain the concept of feedback with block diagram. 6M
b Explain the stability of ac gain in feedback amplifiers. 6M

UNIT-III

- 5 a Draw the circuit diagram of tuned collector oscillator and explain its working. 7M
b A tuned collector oscillator in a radio receiver has a fixed inductance of $60\mu H$ and has to be tunable over the frequency band of 400 to 1200 kHz. Find the range of variable capacitor to be used. 5M

OR

- 6 a Draw the circuit diagram of a Colpitts Oscillator and explain the principle of operation. 7M
b Find the frequency of the oscillations of a transistorized Colpitts oscillator having $C_1 = 150\text{ pF}$, $C_2 = 1.5\text{ nF}$ and $L = 50\mu H$. 5M

UNIT-IV

- 7 a Draw the circuit diagram of push pull class B amplifier and explain its working principle. 7M
b In a class B amplifier, $V_{CE}(\text{min}) = 1\text{ V}$ and supply voltage $V_{CC} = 18\text{ v}$. Find the collector circuit efficiency. 5M

OR

- 8 a Write short note on series fed class A amplifier. 6M
b what is crossover distortion? Explain. 6M

UNIT-V

- 9 a What is multivibrator? How multivibrators are classified. 7M
b With help of diagram explain the operation of Mono stable Multivibrator. 5M

OR

- 10 a Draw a high pass RC circuit and its frequency response. 7M
b How Low pass RC circuit be used as a Integrator. 5M

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