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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.TECH II Year II Semester Supplementary Examinations December 2018
PULSE AND DIGITAL CIRCUITS
(ECE)

Time: 3 hours

Max. Marks: 60

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

UNIT-I

- 1 a. How an RC high pass circuit works as an Integrator? Explain. 6M
b. Draw the response of Integrator for ramp input and explain. 6M

OR

- 2 a. Draw the circuit diagram of two independent levels Clipper and explain the operation with neat sketches. 6M
b. Explain any two applications of two independent levels Clipper in signal processing or communications. 6M

UNIT-II

- 3 a. Draw the circuit diagram of astable multivibrator and derive an expression for pulse width. 8M
b. Design an astable multivibrator to generate 50% duty cycle square wave of 2KHz. 4M

OR

- 4 Design a Schmitt trigger circuit to have $V_{CC}=12V$, $UTP=6V$, $LTP=3V$, using two npn transistors with $h_{fe}(\min)=60$. 12M

UNIT-III

- 5 Explain the basic principles of Miller and Bootstrap time-base generators. Give the comparison of both the generation methods. 12M

OR

- 6 Find the component values of a bootstrap sweep generator, Given $V_{CC} = 18V$, $I_C(\text{sat}) = 2\text{mA}$ and $h_{fe}(\min) = 30$. 12M

UNIT-IV

- 7 a. Compare unidirectional and bidirectional sampling gates. 8M
b. Why the sampling gates are called linear gates? 4M

OR

- 8 With the help of neat diagram explain the working of bidirectional sampling gate using transistors? 12M

UNIT-V

- 9 a. Describe about CMOS NAND and NOR gate with neat circuit diagram. 8M
b. What are the advantages of CMOS over the other logic families? 4M

OR

- 10 a. Explain the synchronization of sweep circuit with symmetric signals. 6M
b. How a sine wave frequency division is done with a sweep circuit. 6M

END