# Code No: R17A0404 MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India) II B.Tech II Semester Supplementary Examinations, April 2023 Pulse and Digital Circuits

(ECE)										
Roll No										

#### Time: 3 hours

**Note:** This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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## SECTION-I

1 a) Explain the operation of RC high pass circuit with ramp input with circuit [7M] diagram.

b) An ideal 1µs is fed to an amplifier. Calculate and plot the output waveform [7M] under the following conditions: the 3-dB frequency is i) 10MHz ii) 1MHz iii) 0.1MHz.

#### OR

a) Draw and explain the response of RLC circuit for a step input. [7M]
b) A symmetrical square wave whose peak-to-peak amplitude is 8V and whose average value is zero is applied to an RC integrating circuit. The time constant is equal to half-period of the square wave. Find the peak to peak value of the output amplitude

### **SECTION-II**

a) Explain the operation of a double diode clipper with help of circuit diagram and waveforms.	[7M] [7M]
b) Explain steady state output for a square wave input of a clamping circuit. OR	
a) Describe in detail about clipping at two independent levels.	[7M]
b) Design a negative clamper with positive and negative biases and then, explain the same.	[7M]
SECTION-III	
List and define all the transistor switching times, with a neat diagrams OR	[14M]
Design astable multivibrator and explain its operation with help of circuit diagram and waveforms.	[14M]
SECTION-IV	
Explain the operation of an exponential sweep circuit with help of circuit diagram and waveforms.	[14M]
OR	
<ul><li>a) Describe the basic principle of Transistor Miler Time Base generator.</li><li>b) Write a short note on Time base generator.</li></ul>	[7M] [7M]
<u>SECTION-V</u>	
a) Compare DTL and TTL families.	[6M]
b) Discuss about RTL logic family in detail, with one example.	[8M]
Pag	e 1 of 2
	<ul> <li>a) Explain the operation of a double diode clipper with help of circuit diagram and waveforms.</li> <li>b) Explain steady state output for a square wave input of a clamping circuit. OR</li> <li>a) Describe in detail about clipping at two independent levels.</li> <li>b) Design a negative clamper with positive and negative biases and then, explain the same.</li> <li><u>SECTION-III</u></li> <li>List and define all the transistor switching times, with a neat diagrams OR</li> <li>Design astable multivibrator and explain its operation with help of circuit diagram and waveforms.</li> <li><u>SECTION-IV</u></li> <li>Explain the operation of an exponential sweep circuit with help of circuit diagram and waveforms.</li> <li>OR</li> <li>a) Describe the basic principle of Transistor Miler Time Base generator.</li> <li>b) Write a short note on Time base generator.</li> <li><u>SECTION-V</u></li> <li>a) Compare DTL and TTL families.</li> <li>b) Discuss about RTL logic family in detail, with one example.</li> </ul>

# **R**17

Max. Marks: 70

10	a) Explain the working of four diode sampling gate with the help of neat circuit	[7M]
	<ul><li>diagram.</li><li>b) Why a OR gate is called mixing circuit? Draw a diode OR circuit for positive logic and explain how it works.</li></ul>	[7M]