III B. Tech I Semester Supplementary Examinations, October/November- 2018
PULSE AND DIGITAL CIRCUITS
(Common to Electronics and Computer Engineering and Electronics and Instrumentation Engineering)

Time: 3 hours　　　　　　　　　　　　　　　　　　　　　　　　　　Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
　　　　2. Answering the question in **Part-A** is compulsory
　　　　3. Answer any **THREE** Questions from **Part-B**
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PART –A

1	a)	Briefly discuss about the ringing circuits?	[3M]
	b)	What are the applications of voltage comparator?	[4M]
	c)	State the logic levels for typical CMOS logic circuits?	[4M]
	d)	What is the significance of collector catching diodes	[4M]
	e)	List the methods of generating a time base waveform?	[3M]
	f)	Compare sine wave synchronization with pulse synchronization?	[4M]

PART -B

2	a)	Derive the expression for the response of an RC integrator circuit when its input is ramp.	[8M]
	b)	What is the ratio of the rise time of the three sections in cascade to the rise time of single section of a low pass RC circuit?	[8M]
3	a)	State and explain clamping circuit theorem. Discuss about the practical clamping circuit with suitable sketches.	[8M]
	b)	Draw a clipper circuit diagram which can clip the applied sinusoidal signal on positive and negative sides of the waveform. The condition is that the circuit should not contain any dc power supplies. Explain the circuit operation with suitable input and output waveforms. Also draw its transfer characteristics.	[8M]
4	a)	Define rise time, storage time, fall time, and turn off time in the case of transistor as a switch with suitable waveforms.	[8M]
	b)	Compare CMOS, TTL and ECL with reference to logic levels, D.C noise margin, Propagation delay and fan-out?	[8M]
5	a)	What is Schmitt trigger? With the help of a neat circuit diagram and waveforms, explain the working of Schmitt trigger?	[8M]
	b)	Explain the method of unsymmetrical triggering of the binary with relevant circuit diagram.	[8M]
6	a)	With the help of circuit diagram, explain the principle of operation of a constant current sweep circuit.	[8M]
	b)	List the three errors that occur in a sweep circuit and obtain the expression for these errors for an exponential sweep circuit.	[8M]
7	a)	What do you mean by a relaxation circuit? Give a few examples of relaxation circuits.	[8M]
	b)	Illustrate with neat circuit diagram, the operation of unidirectional sampling gate for multiple inputs.	[8M]

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