

Code No: P18ECT07

HALL TICKET NUMBER

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PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE  
(AUTONOMOUS)

III B.TECH I SEMESTER END Supplementary EXAMINATIONS, March/April – 2023  
PULSE AND DIGITAL CIRCUITS  
(EEE Branch)

Time: 3 hours

Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

PART-A

Answer all the questions in Part-A (5X2=10M).

Q.No.	Questions	Marks	CO	KL
1.	a) Draw the circuit of RC network s differentiator.	[2M]	1	2
	b) Draw the circuit of Diode clipper.	[2M]	2	2
	c) Mention applications of a transistor.	[2M]	3	1
	d) For a given data of $R=10k\Omega$ and $c=10\mu F$ , Calculate the gatewidth of a monostable multivibrator?	[2M]	4	3
	e) Mention basic operating principle of Sampling Gate?	[2M]	5	2

PART-B

Answer One Question from each UNIT (5X10=50M)

Q.No.	Questions	Marks	CO	KL
UNIT-I				
2.	a) Elaborate briefly the response of Low Pass Filter for step input with required circuit diagrams?	[5M]	1	2
	b) Describe the response of High Pass Filter for symmetrical square wave as input and also derive the expression for % tilt?	[5M]	1	3
OR				
3.	a) Explain how RC network acts as integrator with relevant diagrams?	[5M]	1	2
	b) Describe the response of Low Pass Filter for pulse input?	[5M]	1	2
UNIT-II				
4.	a) State and prove the clamping circuit theorem.	[5M]	2	3
	b) Design a diode clamper circuit to clamp the positive peaks of the input signal at zero level. The frequency of the input signal is 400 Hz.	[5M]	2	3
OR				
5.	a) Briefly explain the clipping at two independent levels with relevant circuit diagrams and waveforms.	[5M]	2	2
	b) Explain transfer characteristics of the emitter coupled clipper and derive the necessary equations.	[5M]	2	3
UNIT-III				
6.	a) Explain the transistor switching times with necessary diagrams.	[5M]	3	2
	b) Explain the principle of operation of self -biased transistor binary circuit	[5M]	3	2
OR				
7.	a) Analyze and design the Bistable Monostable Multivibrator.	[5M]	3	4
	b) Explain briefly the Schmitt trigger circuit using BJT with neat sketch.	[5M]	3	3
UNIT-IV				



8.	a)	Explain different methods of generating time base waveform.	[5M]	4	2
	b)	What are the advantages of Transistor Miller time base generator over Transistor Bootstrap time base generator?	[5M]	4	2
OR					
9.	a)	Explain with a circuit the working of UJT sweep circuit and obtain the expressions for the intrinsic standoff ratio.	[5M]	4	2
	b)	Elaborate Transistor current time base generators with necessary diagrams.	[5M]	4	3
UNIT-V					
10.	a)	With the help of neat circuit diagram explain the working of four diode sampling gate.	[5M]	5	2
	b)	Compare and contrast the logic families related to DTL, TTL and ECL.	[5M]	5	4
OR					
11.	a)	With neat sketch explain Diode-Transistor Logic.	[5M]	5	2
	b)	With the help of neat circuit diagram explain the working of Diode Unidirectional Sampling Gate.	[5M]	5	2

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