



# Sardar Vallabhbhai National Institute of Technology, Surat

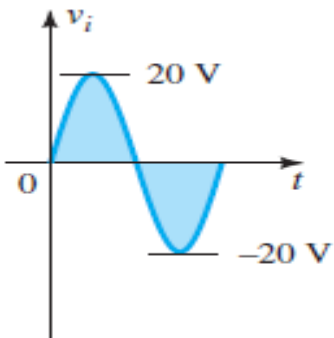
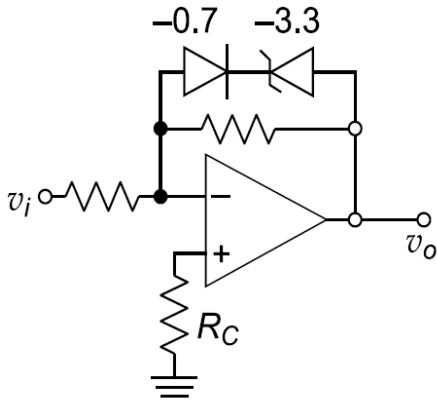
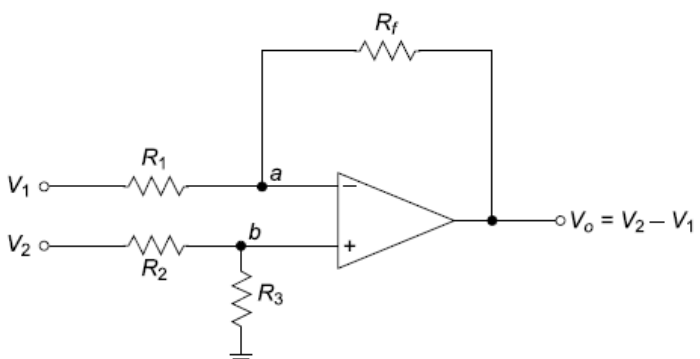
ECED Department

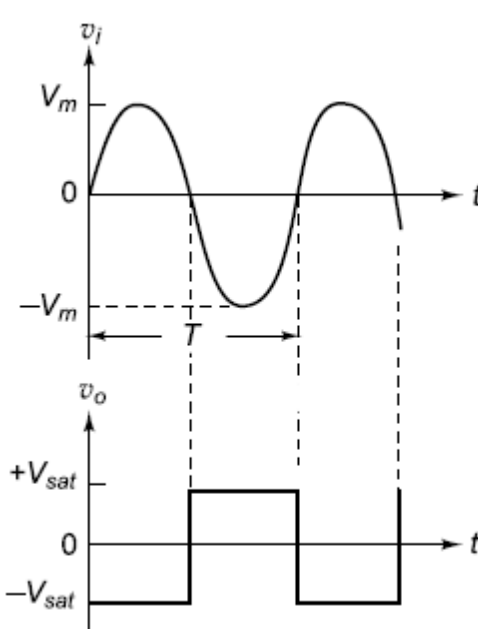
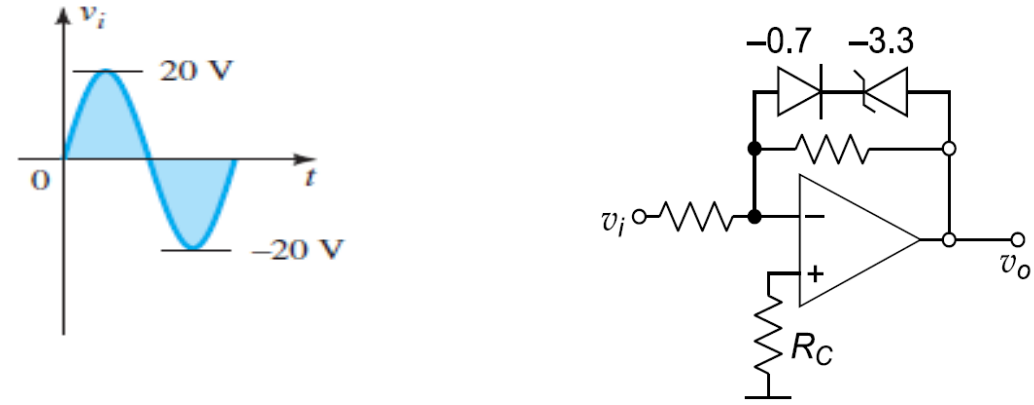
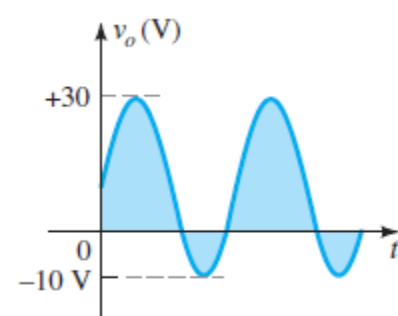
Subject: Digital Electronics and Logic Design  
B.Tech Computer Engineering, Sem-III, Batch - A2

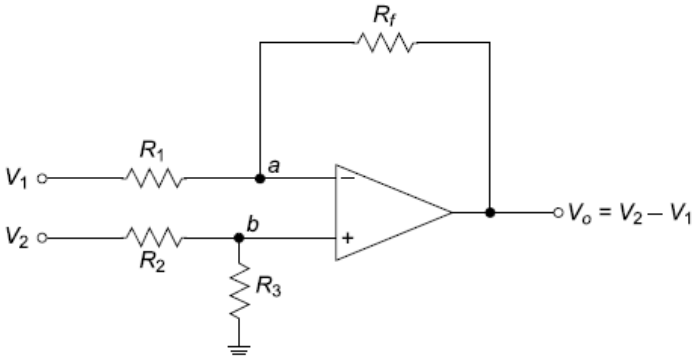
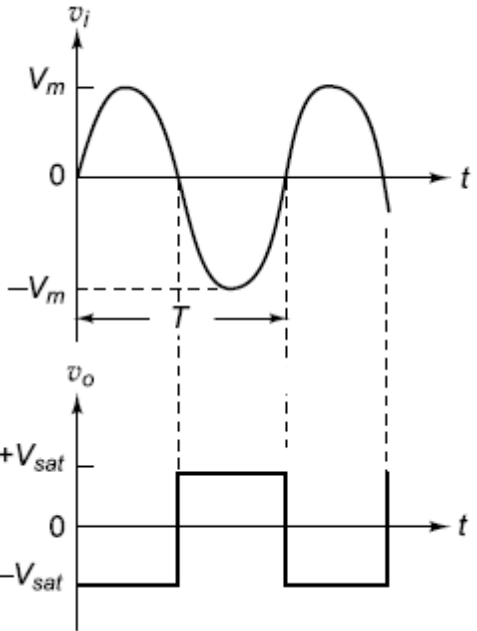
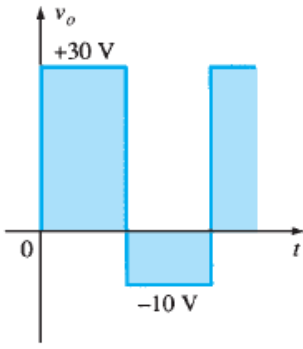
## Final Practical Exam Problem Statements

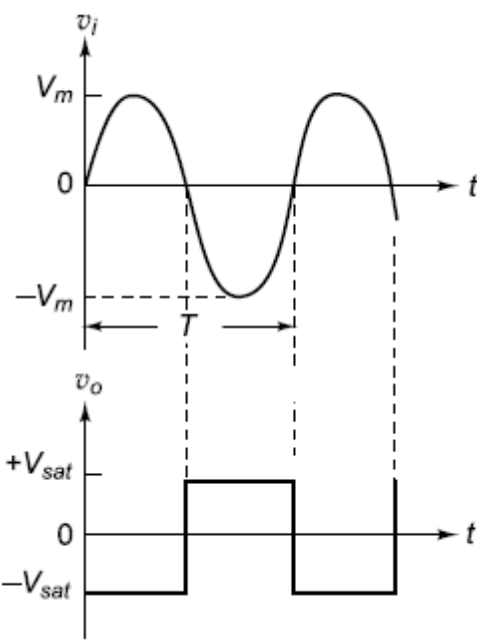
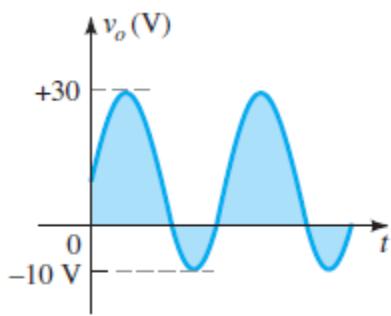
### Instructions:

1. Describe your Problem Statement/Circuit in brief. Write down necessary Equations (if any)
2. Draw Circuit Diagram, Expected Output Waveform/Plots, Expected Output Voltages/Currents.
3. Simulate the Circuit on Multisim/Cedar and attach all the Screenshots.
4. Save your Circuit. The Same will be verified during Simulation - Viva on Individual Basis
5. Put down your Name, Admission No. as well as your sign on all the pages
6. Return a Single PDF File Carrying only your Admission Number.

Admission No.	Problem Statement
U19CS037	Design and Simulate 4 Bit SISO Shift Left Register. Connect 4 Probes to observe the Simulation
U19CS038	Design and Simulate an OPAMP pass filter with a cut-off frequency of 10 KHz.
U19CS039	Design and Simulate 5-Bit Johnson Counter.
U19CS040	<p>Predict the output waveform for following input. Also verify the same using Multisim:</p>  
U19CS041	<p>Determine the resistor values so that output of the following circuit is <math>V_o = V_2 - V_1</math>. Solve for atleast two values of <math>V_1</math> and <math>V_2</math>. Verify the results by simulating them on Multisim.</p> 

<p><b>U19CS042</b></p>	<p>Design and Simulate a circuit which will produce the following output waveform for a sinusoidal input as shown below:</p> 
<p><b>U19CS044</b></p>	<p>Design a circuit using opamps to produce <math>V_o = 2 \cdot V_1 + 3 \cdot V_2 + V_3</math>, where <math>V_1</math> and <math>V_2</math> and <math>V_3</math> are three positive input voltages and <math>V_o</math> is the output. Simulate your design for <math>V_1=1</math>, <math>V_2=2</math>, and <math>V_3=1</math>.</p>
<p><b>U19CS045</b></p>	<p>Design and Simulate an OPAMP pass filter with a cut-off frequency of 10 KHz.</p>
<p><b>U19CS046</b></p>	<p>Predict the output waveform for following input. Also verify the same using Multisim:</p> 
<p><b>U19CS047</b></p>	<p>Design and simulate a circuit to produce the following output waveform for an input of 40 Volts Peak to Peak Sine Wave:</p> 
<p><b>U19CS048</b></p>	<p>Design and Simulate 5-Bit Johnson Counter.</p>
<p><b>U19CS049</b></p>	<p>Determine the resistor values so that output of the following circuit is <math>V_o = V_2 - V_1</math>. Solve for atleast two values of <math>V_1</math> and <math>V_2</math>. Verify the results by simulating them on Multisim.</p>

	
U19CS050	Design and Simulate 4 Bit SISO Shift Left Register. Connect 4 Probes to observe the Simulation
U19CS051	Design and Simulate an OPAMP High Pass filter with a cut-off frequency of 1 KHz.
U19CS052	<p>Design and Simulate a circuit which will produce the following output waveform for a sinusoidal input as shown below:</p> 
U19CS053	Design a circuit using opamps to produce $V_o = 2 \cdot V_1 + 3 \cdot V_2 + V_3$ , where $V_1$ and $V_2$ and $V_3$ are three positive input voltages and $V_o$ is the output. Simulate your design for $V_1 = 1$ , $V_2 = 2$ , and $V_3 = 1$ .
U19CS054	<p>Design and Simulate a circuit to produce the following output waveform for a 40 Volt peak to peak input Square Wave Signal.</p> 
U19CS055	Design and Simulate a circuit which will produce the following output waveform for a sinusoidal input as shown below:

	
U19CS056	Design and Simulate 4 Bit SISO Shift Left Register. Connect 4 Probes to observe the Simulation
U19CS057	Design and implement a 3-Bit Adder to add Two 3-Bit Numbers A2A1A0 and B2B1B0. Attach Simulation results for A2A1A0=101, B2B1B0=111 and A2A1A0=110, B2B1B0=010.
U19CS058	Design and simulate a circuit to produce the following output waveform for an input of 40 Volts Peak to Peak Sine Wave: 
U19CS059	Design and Simulate an OPAMP High Pass filter with a cut-off frequency of 1 KHz.
U19CS060	Design and Simulate a circuit to produce the following output waveform for a 40 Volt peak to peak input Square Wave Signal. 