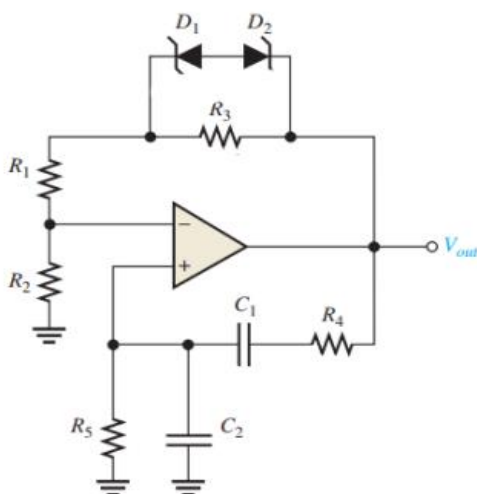
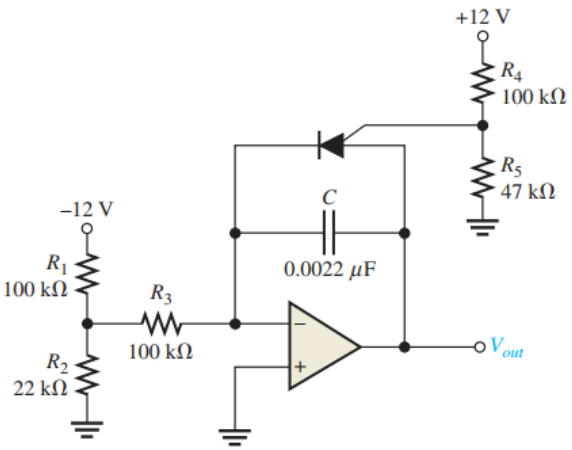


International Islamic University Chittagong
Department of Electrical and Electronic Engineering

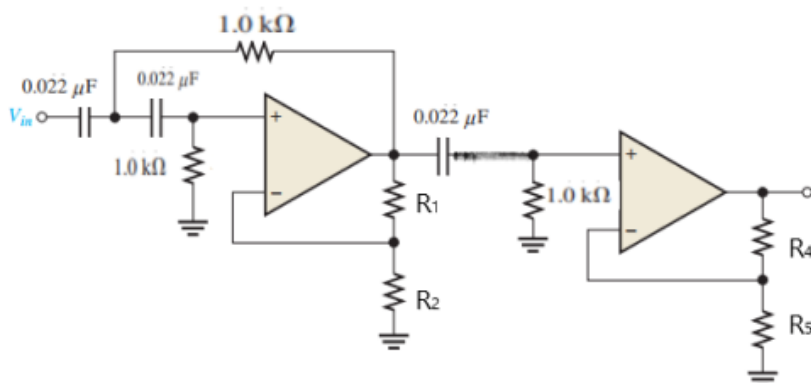
Final Assessment Test Autumn-2020	Program: B.Sc. Engg. (EEE)
Course Code: EEE-2411	Course Title: Electronics II
Time: 5 hours (Writing - 4 hours 30 minutes + 30 minutes submission time)	Full Marks: 50 (Written 30 + Viva/Viva-Quiz-20)

[Answer each of the questions (1-5) from the followings; Figures in the right margin indicate full marks.]

SET-B

1(a).	Design an oscillator that will generate non-sinusoidal signal.	CO3	C	02
1(b).	Explain the purpose of R_3 for the circuit of Fig.1.	CO1	E	02
 <p style="text-align: center;">Fig.1</p>				
1(c).	Determine the amplitude and frequency of output voltage for the circuit of Fig.2. Assume the forward PUT voltage, $V_F = 1V$. Also sketch the output waveform.	CO2	E	02
 <p style="text-align: center;">Fig.2</p>				

	<p style="text-align: center;">Fig.3</p>			
2(a).	Draw the low frequency ac equivalent circuit, equivalent bypass RC circuit and equivalent output RC circuit for the amplifier in Fig.3 assuming r_e of your own choice.	CO1	R	02
2(b).	Determine the critical frequencies associated with low frequency response of BJT amplifier in Fig.3.	CO2	E	02
2(c).	Discuss about the capacitances that may affect the low frequency response of the amplifier in Fig.3.	CO1	U	02
	<p style="text-align: center;">Fig.4</p>			
3(a).	Derive the high frequency equivalent output RC circuit for the amplifier in Fig.4. Also determine the upper critical frequency for output RC circuit.	CO1	E	02
3(b).	Determine the voltage gain and phase shift of the amplifier in Fig.4 at each of the following frequencies: $.1f_c$, f_c , $10f_c$ and $100f_c$ where f_c is the critical frequency.	CO2	E	02
3(c).	Explain total frequency amplifier response.	CO1	E	02
4(a).	Explain filter response characteristics.	CO1	E	02
4(b).	Determine the values of the feedback resistors and cut-off frequency for the circuit of Fig.5 to give approximate Butter-worth response.	CO2	E	02

	 <p style="text-align: center;">Fig.5</p>			
4(c).	Modify the filter in Fig.5 to increase the roll-off rate to -120 dB/decade while maintaining an approximate Butter-worth response.	CO3	Ap	02
5(a).	Explain the use of LED in fax machine.	CO1	E	03
5(b).	Explain the working principal of p-n junction photodiode.	CO1	E	03
6.	Viva/Viva-Quiz: The time of viva/viva-quiz will be declared in google classroom.			20

Name and Designation:
Tanzim Mushtary



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Assistant Lecturer, Dept. of EEE, IIUC.