



Daffodil International University
 Department of Electrical and Electronic Engineering
 Faculty of Engineering
Midterm Examination, Fall-2026

Course Code: 0714-221
 Section: : A,B,C,D,E,F,G
 Full Marks: 25

Course Title: Electronics-II
 Level-Term: L2-T2
 Exam Date: October 31, 2026

Teacher's Initial: MH , RS , MMJ
 Time: 1.5 Hours

[Note: Answer all the questions. CO's represent one of the learning outcomes of the course. Figure on the right hand side indicate marks allocated for the question]

- Q1. Explain** the working of the op-amp circuit in Figure 1 as a Pulse Width Modulator (PWM). Using this explanation, determine V_s , V_s' , V_k and ω so that the given output waveform is obtained. (From Figure1) CO-1 [5]
(C2)

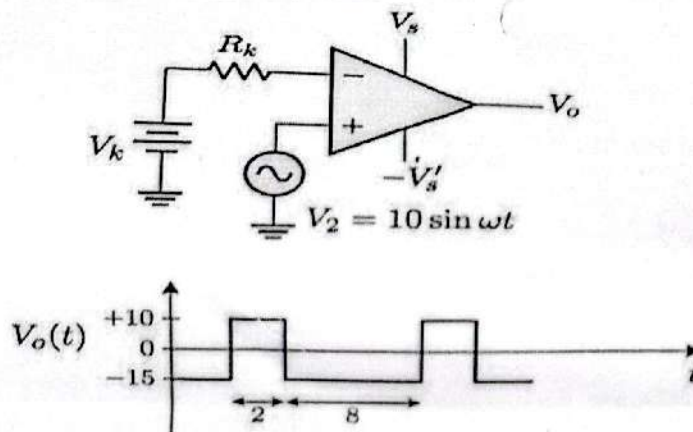


Figure 1

- Q2. Calculate** Output voltage of this circuit.(From Figure-2)

CO-2 [5]
C(2)

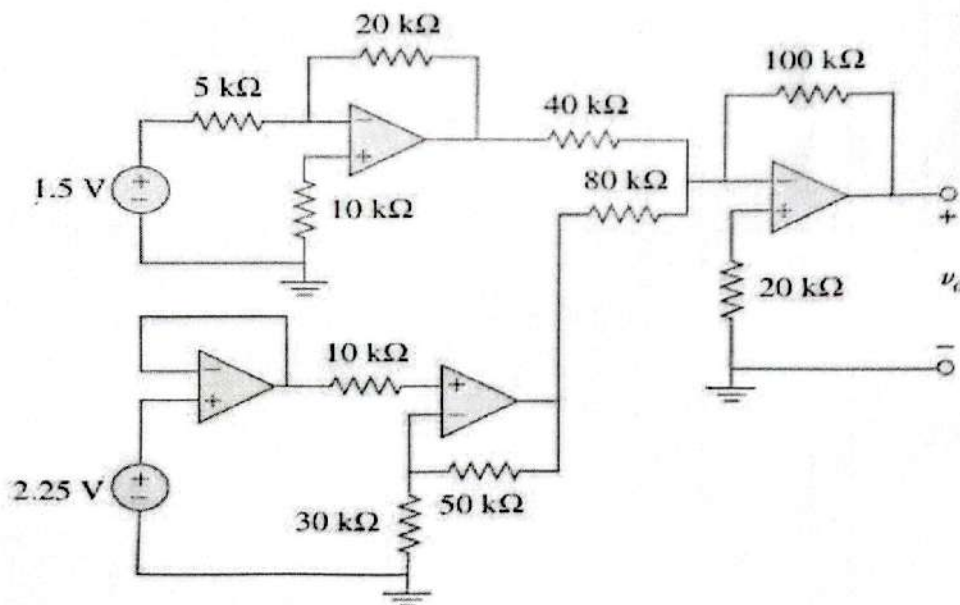


Figure 2

Q3. Calculate Voltage gain for the circuit below. (From Figure-3)

CO-2
C(2)

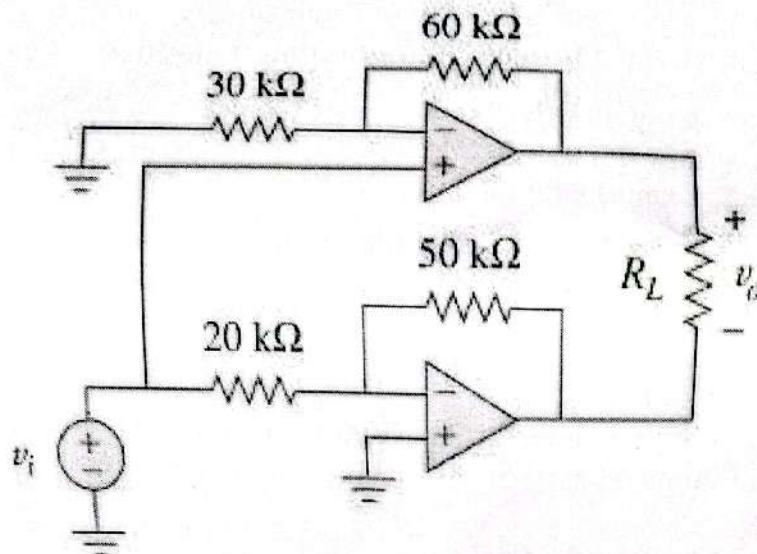


Figure 3

Q4. Draw the output voltage waveform, $V_o(t)$. (From Figure-4)

CO-2 [5]
C(2)

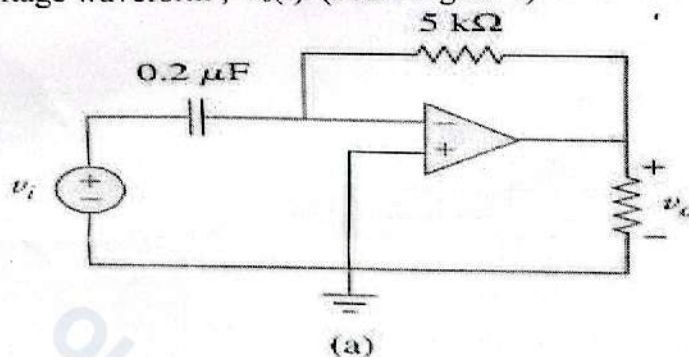
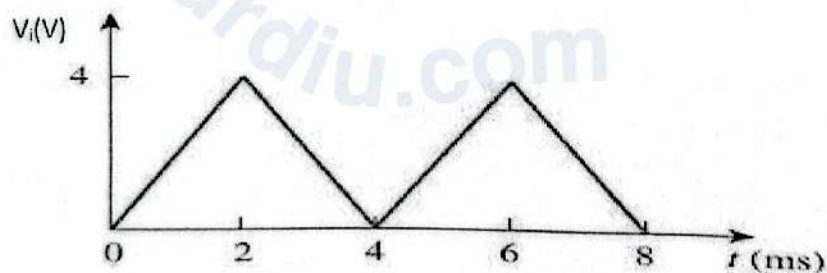


Figure 4

Q5. Design a closed-loop op-amp circuit to implement the equation

CO-2 [5]
C(2)

$$3 \frac{d^2 V_o}{dt^2} - 5 \frac{dV_o}{dt} + 2V_o = 4V_i$$