Daffodil International University
Faculty of Science & Information Technology
Department of Computer Science & Engineering Lab Final Examination, Summer 2026
Course Code: PHY103, Course Title: Physics II Lab
Level: 1 Term: 3 Batch: 70_M

Time: 01:10 Hrs **Part A** **Marks: 20**

1.	a)	What is spring constant (k)?	1*3=3	CO1
	b)	What is compound pendulum?		
	c)	Write the formula of specific resistance using a meter bridge.		
2.		*Answer any two from (a-d) and one from (e) & (f)*		
	a)	Derive the expression for the resistance of a galvanometer by the half-deflection method.	4*2=8	CO2
	b)	Derive the condition of balance of a Wheatstone Bridge using Kirchhoff's Laws.		
	c)	Prove that the period of a compound pendulum is the same when oscillated about two parallel axes equidistant from the center of mass, and derive the expression for (g).		
	d)	Derive the equivalent resistance for both series and parallel combinations of resistors using Ohm's law and Kirchhoff's rules.		
	d)	Draw the circuit diagram used in half deflection method to determine resistance of a galvanometer.	3	
	e)	Draw the experimental setup (circuit diagram) for the meter bridge experiment used to determine the specific resistance of a wire.		
3.		The following data were recorded for a radioactive sample.		

Time (minute)	0	2	4	6	8	10
Number of Nuclei ($\times 10^3$)	100	82	67	55	45	37

a)	Draw the graph of **Number of Nuclei** versus **Time.**	3	CO3
b)	Describe the nature of the graph.	1	
c)	Does the rate of decay remain constant throughout the experiment?	2	