MATIGO MOCKS 2024 535/2 PHYSICS PRACTICAL SCORING GUIDE, 2024

Item 1

	Basis of assessment	Code	Criteria	Score		Max. score
1	Aim of the experiment	A	Properly stated aim • **To determine the density of a steel mass** **Accept** • **To determine the density β of steel mass**	2	A 2	2
			Partially stated aim **To determine the density**	1	A 1	
			No or incorrect aim	0	A 0	
2	Variables of the experiment	V	Correct independent variables stated • **Mass M of the solid**	1	V_I 1	3
			No or incorrect independent variable stated	0	V_I 0	
			1 Correct dependent variables stated • **Weight in water, Wx** • **Weight in air, Wa**	1	V_D 1	
6			No or incorrect dependent variable stated	0	V_D 0	
			Correct control variables stated • **Wind** • **Moisture**	1	V_c 1	
			No or incorrect control variable stated	0	V_c 0	
3	Hypothesis	H	Correct Hypothesis stated • **Density Between (5.0 to 10.0)gcm^{-3}**	1	H 1	1

			No or incorrect Hypothesis stated	0	H 0	
4	List of apparatus and materials	A_p	All relevant apparatus and materials stated • **Refer to the set up**	2	A_p 2	2
			Partially relevant apparatus and materials stated	1	A_p 1	
			No or irrelevant apparatus and materials stated	0	A_p 0	
5	Drawing of experiment setup	D	Correct or complete well drawn and labelled	2	D 2	2
			Partially labelled	1	D 1	
			No or incorrect or wrong drawing	0	D 0	
6	Procedure of the experiment and setup	P_R	• **All relevant procedures of the experiment and setup stated.** a) Water is poured to at most a half of the beaker. b) Spring balance is clamped c) A mass M=50g is suspended on the spring balance using a piece of thread d) The Weight Wa of the mass in air is noted e) The Mass is gently lowered into the water in the beaker while still on the spring balance. f) The weight **Wx** in water is read and recorded. g) Procedures (c) to (f) are repeated for other values of M = ..., ..., ..., ..., ... and ..... g	2	P_R 2	2

	Relevancy		h) Results are recorded in a suitable table including **Wa** and **Wx** i) A graph of **Wx** against **Wa** is plotted j) Slope S of the graph calculated k) Density of the steel $= \frac{1}{1-S}$			
			Partially relevant procedures of the experiment and setup stated	1	P_R 1	
			No/ irrelevant procedures of the experiment and setup stated	0	P_R 0	
	Coherency	P_c	• **Coherent procedures of the experiment.**	2	P_c 2	2
			Partially coherent procedures of the experiment.	1	P_c 1	
			Incoherent procedures of the experiment	0	P_c 0	
7	Presentation of data	D_p	Correct presentation of data	2	D_p 2	2
			Partially correct presentation of data • **Design of columnar table of results with at least 3 values of M with an equal or uniform interval**	1	D_p 1	
			No or incorrect presentation of data	0	D_p 0	
	Recording of data	D_R	Correct recording of data stated • **Values of Wa and Wx recorded (in newton) Accept** • **Wa and Wx recorded (in gram)**	2	D_R 2	2
			Partially correct recording of data	1	D_R 1	

			No or incorrect recording of data	0	D_R 0	
	Set of data	D_S	Maximum set of data stated (3 or more) • **Values of M set with interval**	2	D_S 2	2
			Minimum set of data stated (1)	1	D_S 1	
			No or incorrect set of data stated	0	D_S 0	
8	Accuracy of data	A_C	Correct accuracy of data stated • **Values of Wa and Wx in a particular or specific trend. (both increasing or decreasing)**	2	A_C 2	2
			Partially correct accuracy of data stated	1	A_C 1	
			No or incorrect accuracy of data stated out of range	0	A_C 0	
9	Data analysis and interpretation	D_A	Appropriate method used to process data(s.f and d.p) • **Values of Wa and Wx recorded to 2dp(in newton)** **Accept** • **Wa and Wx recorded to 0 or 1dp (in gram)**	3	D_A 3	3
			Partially appropriate method used to process data	2	D_A 2	
			No or incorrect method used to process data	0	D_A 0	
		D_I	Correct interpretation of data ***Accept methods like;***	2	D_I 2	2

			Graph; • **Bearing correct title, scale, axes label** • **Correct Plotting** • **Method of finding the slope, S** • $\boldsymbol{Density = \frac{1}{1-S}}$ • **Value, and correct units**			
			Partially correct interpretation of data	1	D_I 1	
			No or incorrect interpretation of data	0	D_I 0	
10	Sources of errors	E_R	• **At least 2 sources of errors stated**	2	E_R 2	2
			1 source of error stated	1	E_R 1	
			No or incorrect sources of errors stated	0	E_R 0	
11	Precautions	P_r	• **At least 2 relevant precautions stated**	2	P_r 2	2
			1 relevant precautions stated	1	P_r 1	
			No or incorrect precautions stated	0	P_r 0	
12	Conclusion	C	Well stated conclusion based on interpretation • **The density of steel is …..gcm^{-3}**	2	C 2	2
			Partial stated conclusion based on interpretation	1	C 1	
			No or incorrect interpretation	0	C 0	
			TOTAL SCORE			**32**
			+256780413120			