BBB

535/2

PHYSICS

PRACTICAL

SCORING GUIDE

ITEM 1

NO.	BASIS OF ASSESSMENT	EXPECTED RESPONSES	SCORING CRITERIA *(key points)*	SCORE	TOTAL SCORE
1	AIM	A scientific investigation to determine the force constant of the spring provided and ascertain whether its appropriate for use in the grafting scissors A	Complete, correct *(02)*	02	02
			Partial, correct *(01)*	01	
			No/ wrong aim *(00)*	00	
2	HYPOTHESIS	The force constant of the spring provided is in the range of 18 Nm^{-1} - 25 Nm^{-1} H	Complete, correct *(01)*	01	01
			No, wrong hypothesis *(00)*	00	
3	VARIABLES	Independent *(Mass, m) (extension* V_I Dependent extension produced, New length V_D Controlled *(Initial position of the pointer)* V_C	Correct , relevant *(01)*	01	03
			Correct, relevant *(01)*	01	
			Controlled, relevant *(01)*	01	
			No, wrong variable *(00)*	00	
4	APPARATUS	Metre rule, Retort stand with a clamp, thespring with a pointer., Masses AP	Relevant, correct, complete *(3-5)*	02	02
			Relevant, correct partial *(1-2)*	01	
			No, wrong apparatus *(00)*	00	

5	**PROCEDURE**	Coherence- No expected responses, coherenceis determined by assessor's judgement	All coherent *(4-8)*	02	02
			Partial coherent *(1- 3)*	01	
			No coherence *(00)*	00	
	PROCEDURE (Continued)	The experimental set up is assembled as shown. The initial position of the pointer is noted(read and recorded). A known mass, m is suspended from the free end of the spring. The new position of the pointer is noted. The extension produced is calculated. The experiment is repeated for different values of the mass. The results are tabulated. A graph of mass against the extension is plotted.	Complete, correct, relevant *(5 -8)*	03	03
			Partial correct, relevant *(3 - 4)*	02	
			Partial correct, relevant *(1 - 2)*	01	
			No/wrong procedure *(00)*	00	
7	**DATA PRESENTATION**	Table of results of at least 3 columns	Correct ≥3 ~~(1-3)~~	01	01
		Labeled columns with quantity and unit *m(g), new position(cm), extension produced(cm)*	Correct ≥3 ~~(1-3)~~	01	01
		Sets of data presented	sets of data correct sets (≥3)	03	03
			~~correct~~ partial (2)	02	
			~~sets~~ No/wrong (1)	01	
			~~*Initial position of point*~~	01	
		Accurate data, correctly recorded *(decimal places and significant figures)*	Complete correct (≥3)	02	02
			Partial correct *(1-2)*	01	
			No/ wrong data *(00)*	00	

7 8	DATA ANALYSIS	Graph with *labeled axes and title* G1	Correct *(1- 3)*	01	01
			No/ wrong labels *(00)*	00	
		Plotting of points and *line of best fit* G2	Correctly plotted points *(1- 3)*	01	02
			Line of best fit for atleast 2 points plotted	01	
			No/ wrong plotting *(00)*	00	
		Slope calculation values should be obtained from the graph not the table. G3	Correct method of getting a slope — 01 Correct slope calculation	01	01
			No/wrong calculation	00	
		Accuracy of slope value and unit conversion As	Accurate math computation	01	01
			No/wrong maths	00	
6	ERRORS & PRECAUTIONS Any thing that can interfere with the experimental values	All relevant suggested sources of errors *(internal and external factors)* Unstable ground/surface Wind/Air parallax Non-uniformity of apparatus Er	Possible errors *(≥ 2)*	02	02
			Possible errors *(1)*	01	
			No/wrong errors suggested *(00)*	00	
		All relevant suggested precautions and mitigation measures M	Possible precautions *(≥ 2)*	02	02
			Possible precautions *(1)*	01	
			No/wrong precautions *(00)*	00	
9	ADVISE CONCLUSION	Advise linking the findings to the hypothesisand aim of the investigation correct complete conclusion with —02 advise Ad	Correct/complete conclusion based on findings Advise with reason	02	02
			Partial correct only advise	01	
			No/wrong conclusion	00	

12506
1909
1441$ payers

1 — 4 —— 8 scores

5 — 6 —— 11 scores

7 — 9 —— 15 scores

34 scores

~~285x40 / 1000 = 0.785N~~

NO.	BASIS OF ASSESSMENT	EXPECTED RESPONSES	CODES	SCORING CRITERIA *(key points)*	SCORE	TOTAL SCORE
1	**AIM**	A scientific investigation to <u>determine the</u> <u>focal length</u> of the concave mirror and <u>ascertain</u> <u>whether</u> the Headteacher can <u>use theconcentrator for</u> <u>the intended Purpose</u>.	A	Complete, correct *(02)*	02	02
				Partial, correct *(01)*	01	
				No/ wrong aim *(00)*	00	
2	**HYPOTHESIS**	The the focal length of the concave concentrator is in the range of **80 cm** to **220 cm**	H	Complete, correct *(01)*	01	01
				No, wrong hypothesis *(00)*	00	
3	**VARIABLES**	Independent *(object distance, u)* Dependent *(image distance, v)* Controlled ***(lihgt intensity in the room)***	V_I V_d V_c	Correct , relevant *(01)*	01	03
				Correct, relevant *(01)*	01	
				Controlled, relevant *(01)*	01	
				No, wrong variable *(00)*	00	
4	**APPARATUS**	Metre rule, torch bulb, dry cells, white screen,mirror in a holder, wires, cell holders Switch, Wooden block (Blick)	A_P	Relevant, correct, complete *(3-5)*	02	02
				Relevant, correct partial *(1-2)*	01	
				No, wrong apparatus *(00)*	00	T-T = 08
5	**PROCEDURE**	~~Drawing of any experimental set-up~~ Coherence- No expected responses, coherenceis determined by assessor's judgement	P_C	All coherent *(4-8)*	02	02
				Partial coherent *(1- 3)*	01	
				No coherence *(00)*	00	
		Drawing of any experimental set-up from the learner	D	Complete, correct ≥ 2 — 02 Partial, correct 01 No, Wrong set up 00	02 01 00	02

	PROCEDURE (Continued)	Procedure as presented by candidate.	PR	Complete, correct, relevant *(5 -8)* Partial correct, relevant *(3 - 4)* Partial correct, relevant *(1 - 2)* No/wrong procedure *(00)*	03 02 01 00	03
~~07~~ 7	**DATA PRESENTATION**	Table of results of at least 4 columns	T_1	Correct (≥4) ~~(≥4)~~	01	01
		Labeled columns with quantity and unit *u(cm), v(cm)- must be seen*	T_2	Correct (≥ 4) ~~(≥3)~~ Partial, correct. (2-3)	02 01	02
		Sets of data presented	T_3	sets of data which are correct (≥3) ~~correct~~ (2) ~~sets~~ (1) ~~Initial position of point~~	03 02 01 ~~01~~	03
		Accurate data, correctly recorded *(decimal places and significant figures)*	A_1	Complete correct (≥3) Partial correct (1-2) No/ wrong data (00)	02 01 00	02
7 8	**DATA ANALYSIS**	Graph with *labeled axes and title*	G_1	Correct (1- 3) No/ wrong labels (00)	01 00	01
		Plotting of points and *line of best fit*	G_2	Correctly plotted points (1- 3) *Line of best fit* through atleast 2 correctly plotted pts No/ wrong plotting (00)	01 01 00	02
	Alternative A learner who calculated - Additional column T_4 = correct label - 01 = Data manipulation - 02 (≥3) - Data well manipulated (1-2) - 01 00 - 00 mtd of getting mean correct (01) - T_5	Slope calculation, calculation of focal length of the concentrator	G_3	Correct slope calculation mtd of getting a slope No/wrong calculation	01 00	01
		Accuracy of slope value and unit conversion	As	Accurate math computation No/wrong maths	01 00	01

Accurate value of mean - As - 01

8 6	**ERRORS & PRECAUTIONS**	All relevant suggested sources of errors *(internal and external factors)* * failure to identify the image * Parallax * Too much light * Dimensions of the bulb E	Possible errors *(≥ 2)*	02	02
			Possible errors *(1)*	01	
			No/wrong errors suggested *(00)*	00	
		All relevant suggested precautions and mitigation measures M	Possible precautions *(≥ 2)*	02	02
			Possible precautions *(1)*	01	
			No/wrong precautions *(00)*	00	
9	**ADVISE CONCLUSION**	Advise linking the findings to the hypothesisand aim of the investigation A_D	Correct/complete conclusion based on findings Advise with rsn	02	02
			Partial correct ~~advise~~ only	01	
			No/wrong conclusion	00	