Scheme of Evaluation

(Scoring Indicators)

QID 2112230504

Course Name: **Applied Physics I**

Course Code: **1003**

Revision: **2021**

Q. No	Scoring Indicators	Split score	Sub Total	Total Score
I	**Part A**			9
1	unit	1	1	
2	rad/s	1	1	
3	$\frac{2}{5}MR^2$	1	1	
4	negative	1	1	
5	electrical energy	1	1	
6	radiation	1	1	
7	compressibility	1	1	
8	hρg	1	1	
9	terminal velocity	1	1	
II	**Part B**	1	1	24
1	Any six fundamental quantities Units	1.5 1.5	3	
2	Statement Derivation of F = ma	1.5 1.5	3	
3	Ice melts – MI increases Conserve angular momentum (L = Iω) ω decreases and duration of day increases	1 1 1	3	
4	Derivation of v = rω	3	3	
5	Any three laws	3	3	
6	Definition Equation SI unit (watt)	1 1 1	3	
7	Metals are good conductor of heat Wood is bad conductor of heat	1.5 1.5	3	
8	Gauge pressure – pressure with respect to atmosphere Absolute pressure – pressure with respect to absolute vacuum Equations	1 1 1	3	
9	Formula Different parameters	2 1	3	
10	Three differences	3	3	
	Part C			42
III	Mean = 2.86 Absolute errors – 0.08, 0.04, 0.06 and 0.01	2 2		

	Mean absolute error – 0.05 Relative error – 0.017 Percentage error – 1.7 %	1 1 1	7	
IV	Figure of collision case Equations for F_{12} and F_{21} using Newton's second law $F_{12} = - F_{21}$ (using third law) Momentum Conservation equation	1 3 2 1	7	
V	(a) explanation (b) figure Derivation of $\theta = \tan^{-1}(v^2/rg)$	2 1 4	7	
VI	(a) explanation (b) statement of parallel axis theorem Figure and equation Statement of perpendicular axes theorem Figure and equation	1 2 1 2 1	7	
VII	(a) Definition Two examples (b) statement Figure and equations	2 1 2 2	7	
VIII	m = 5 kg, R = 2m, $\omega = 60$ rpm = 1 rps $T = mR\omega^2$ On substituting T = 10 N	1 2 4	7	
IX	Freely falling case – figure Three positions PE, KE, TE derivations	1 2 each (6)	7	
X	Mercury thermometer - figure Working Pyrometer - figure Working Applications of pyrometer	1 2 1 2 1	7	
XI	Name of three moduli Definitions with equations	1 each (3) 4	7	
XII	$d_1 = 15$ cm, $r_1 = 7.5$ cm, $d_2 = 7$ cm, $r_2 = 3.5$ cm, $v_1 = 5$ m/s, $v_2 = ?$ $a_1v_1 = a_2v_2$; $\pi r_1^2 v_1 = \pi r_2^2 v_2$ On substituting $v_2 = 23$ m/s	1 2 4	7	
XIII	m= 100 kg, h = 10m, t = 5 s, $\eta = 0.6$, P = ? $P_{out} = W/t = mgh/t = 1960$ W $\eta = P_{out}t/P_{in}$; $P_{in} = P_{out}/\eta = 3267$W	1 4 2	7	
XIV	Statement Equation Any one application	2 2 3	7	