

# Rubrics : SSC 1st ANNUAL EXAMINATION 2023

## Subject: PHYSICS-I (LOCAL)      Final: 29-4-2023 (4:45 PM)

Q No/ Part No	Criteria	Level 1 (Marks)	Level 2 (Marks)	Level 3 (Marks)	Level 4 (Marks)	Level 5 (Marks)
2 (i)	Conversion	Correct conversion from teragram to milligram (03)	Partially correct (02)	Some relevant steps (01)	Wrong (0)	
2 (ii)	Data	Extraction of correct data in SI units (01)	Partially correct data (0.5)	Wrong (0)		
	Calculation	Correct calculation (02)	Partially correct (1.5)	Some relevant steps (01)	Wrong (0)	
2 (iii)	Circular motion	Correct definition (01)	Partially correct definition/one example (0.5)	Wrong (0)		
	Rotatory motion	Correct definition (01)	Partially correct definition/one example (0.5)	Wrong (0)		
	Vibratory motion	Correct definition (01)	Partially correct definition/one example (0.5)	Wrong (0)		
2 (iv)	Definition of centripetal force	Correct definition (01)	Partially correct definition (0.5)	Wrong (0)		
	Proof of centripetal force	Correctly deriving formula (using Newton's 2 <sup>nd</sup> law by putting centripetal acceleration formula in it). (02)	Partially correct (1.5)	Some relevant steps (01)	Wrong (0)	
2 (v)	Differences between mass and weight	Any three correct differences (03)	Any two correct differences (02)	Any one correct difference/ relevant information (01)	Wrong (0)	
2 (vi)	Centre of mass	Correct explanation or correct definition with example (1.5)	Partially correct (01)	Some relevant information (0.5)	Wrong (0)	
	Centre of gravity	Correct explanation or correct definition with example (1.5)	Partially correct (01)	Some relevant information (0.5)	Wrong (0)	
2 (vii)	Calculation of mass of earth	Correct calculation of mass of earth (correct formula + putting correct	Partially correct (02)	Any one correct step (01)	Wrong (0)	

		values of $R_e$ , $g$ and $G$ + correct answer) (03)				
2 (viii)	Brief explanation of couple	correct brief explanation e.g. correct definition with formula OR its derivation with labeled figure etc. (02)	Partially correct (01)	Some relevant information (0.5)	Wrong (0)	
	Example	Correct example (01)	Partially correct (0.5)	Wrong (0)		
2 (ix)	Deriving formula for $g_h$	Correct derivation (02)	Partially correct (01)	Any relevant step (0.5)	Wrong (0)	
	Relating value of "g" with altitude	Correct description OR relation (01)	partially correct (0.5)	Wrong (0)		
2 (x)	Condition for maximum work	Correct condition i.e. Force and displacement (distance) are parallel OR angle $0^\circ$ OR figure and calculation (1.5)	Partially correct (01)	Some relevant information (0.5)	Wrong (0)	
	Condition for minimum work	Correct condition i.e. Force and displacement (distance) are perpendicular OR angle $90^\circ$ OR displacement=0 OR work along closed path figure and calculation (1.5)	Partially correct (01)	Some relevant information (0.5)	Wrong (0)	
2 (xi)	Calculation of K.E.	Correct calculation (03)	Partially correct (02)	Some relevant steps /information (01)	Wrong (0)	
2 (xii)	Plasma as 4th state of matter	Correct reason (03)	Partially correct (02)	Some relevant information (01)	Wrong (0)	
2 (xiii)	Factors affecting the liquid pressure	Correctly mentioning the factors e.g. density of liquid and depth (03)	Partially correct OR writing correct formula (02)	Any relevant factor (01)	Wrong (0)	
2 (xiv)	Differences between boiling and evaporation	Any two correct differences (03)	Any one correct difference (02)	Any relevant information (01)	Wrong (0)	
2 (xv)	Blowing of sea breeze during the day time	Correct reasoning (03)	Partially correct (02)	Some relevant information (01)	wrong (0)	

3 (a)	Brief description of rate of flow of heat	Correct description (02)	Partially correct (01)	Wrong (0)		
	Factors affecting the rate of flow of heat	Correct names of three factors (1.5)	Correct names of two factors (01)	Correct name of one factor (0.5)	wrong (0)	
	Derivation of formula of 'rate of flow of heat'	Correct derivation (02)	Partially correct (01)	Some relevant steps (0.5)	wrong (0)	
	Unit of rate of flow of heat	Correct unit (0.5)	Wrong (0)			
3 (b)	Conversion Celsius to Kelvin scale	Correct conversion of 0°C and 40°C into Kelvin (02)	Partially correct (01)	Wrong (0)		
	Conversion Celsius to Fahrenheit scale	Correct conversion of 0°C and 40°C into Fahrenheit (02)	Partially correct (01)	Wrong (0)		
4 (a)	Statement of Pascal's law	Correct statement (02)	Partially correct (01)	Wrong (0)		
	Description of working principle of hydraulic lift	Correct description of working principle of hydraulic lift e.g. figure, its description and relevant mathematical explanation (04)	Partially correct description (any two steps mentioned in level-1) (03)	Correctly describing any one step mentioned in level-1) (02)	Some relevant information (01)	Wrong (0)
4 (b)	Effect of change in atmospheric pressure on weather	Correct explanation of any three effects (04)	Correct explanation of any two effects (03)	Correct explanation of any one effect (02)	Some relevant information (01)	Wrong (0)
5 (a)	Stable equilibrium	Correct description with example (02)	Partially correct (01)	Some relevant information (0.5)	Wrong (0)	

	Unstable equilibrium	Correct description with example (02)	Partially correct (01)	Some relevant information (0.5)	Wrong (0)	
	Neutral equilibrium	Correct description with example (02)	Partially correct (01)	Some relevant information (0.5)	Wrong (0)	
5(b)	Calculation of maximum height	Correct calculation (02)	Partially correct (01)	Wrong (0)		
	Calculation of initial velocity	Correct calculation (02)	Partially correct (01)	Wrong (0)		

**Note: All the markers must know the solutions of all the question items of the question paper before starting marking.**