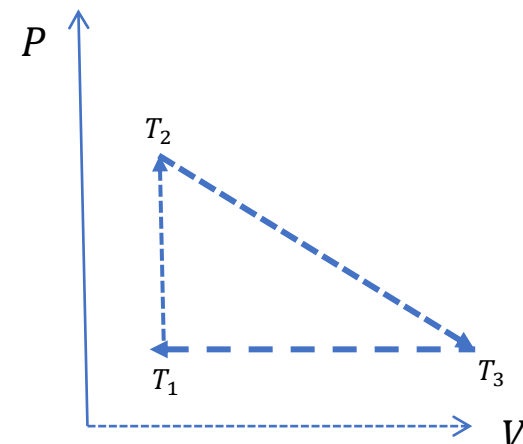


## Assignment for students participating in the HSC Examination of 2022

Subject: Physics

Paper: 2nd paper Sub. Code: 175

Class: HSC

Assign ment No.	Assignment	Learning outcomes/Content	Instruction (Symbol/Step/Depth)	Assessment Criteria						Comments																																																														
	<p><b>Always heat is produced during conversion of energy</b></p> <p><b>A gas(may not be an ideal gas) of fixed mass is taken in a metal cylinder having frictionless piston. The volume of the gas can be changed due to changing the position of the piston and the temperature of the gas will change due to the good conducting metal wall of the cylinder.</b></p> <p><b>Here, P~V graph is shown below at three different temperatures-</b></p> <div></div> <p>a) Calculate the work done for T<sub>1</sub> to T<sub>2</sub></p> <p>b) Calculate the required heat to increase of internal energy to increase of temperature from T<sub>1</sub> to T<sub>2</sub></p> <p>c) Calculate the required heat &amp; increase of internal energy to increase of temperature from T<sub>2</sub> to T<sub>3</sub></p>	<p>1. Learners will be able to explain the 1<sup>st</sup> law of thermodynamics.</p> <p>2. Learners will be able to explain the internal energy.</p> <p>3. Learners will be able to make relationship between absorbed or released heat, change of internal energy and the work done in a thermodynamic system.</p>	Application of the 1 <sup>st</sup> law of thermodynamics in different thermodynamic process	<table><tr><th rowspan="2">Order</th><th rowspan="2">Indicator</th><th colspan="4">Level of expertise</th><th rowspan="2">Total</th></tr><tr><th>4</th><th>3</th><th>2</th><th>1</th></tr><tr><td rowspan="3">(a)</td><td>Presenting acceptable answers (including units) with necessary information and mathematical formulas.</td><td></td><td>√</td><td></td><td></td><td rowspan="3">3</td></tr><tr><td>Presenting acceptable answers with mathematical formulas only</td><td></td><td></td><td>√</td><td></td></tr><tr><td>Introducing mathematical formulas only</td><td></td><td></td><td></td><td>√</td></tr><tr><td rowspan="3">(b)</td><td>Presenting acceptable answers (including units) with necessary information and mathematical formulas.</td><td></td><td>√</td><td></td><td></td><td rowspan="3">3</td></tr><tr><td>Presenting acceptable answers with mathematical formulas only</td><td></td><td></td><td>√</td><td></td></tr><tr><td>Introducing mathematical formulas only</td><td></td><td></td><td></td><td>√</td></tr><tr><td rowspan="4">(c)</td><td>Presenting acceptable answers (including units) with necessary information and mathematical formulas.</td><td>√</td><td></td><td></td><td></td><td rowspan="4">4</td></tr><tr><td>Presenting acceptable answers with mathematical formulas only</td><td></td><td>√</td><td></td><td></td></tr><tr><td>Introducing mathematical formulas only</td><td></td><td></td><td>√</td><td></td></tr><tr><td>Presenting only idea</td><td></td><td></td><td></td><td>√</td></tr></table>	Order	Indicator	Level of expertise				Total	4	3	2	1	(a)	Presenting acceptable answers (including units) with necessary information and mathematical formulas.		√			3	Presenting acceptable answers with mathematical formulas only			√		Introducing mathematical formulas only				√	(b)	Presenting acceptable answers (including units) with necessary information and mathematical formulas.		√			3	Presenting acceptable answers with mathematical formulas only			√		Introducing mathematical formulas only				√	(c)	Presenting acceptable answers (including units) with necessary information and mathematical formulas.	√				4	Presenting acceptable answers with mathematical formulas only		√			Introducing mathematical formulas only			√		Presenting only idea				√	
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