

## Assignment for the examinee of HSC-2022

Subject: Chemistry

Paper: 2<sup>nd</sup>

Subject code: 177

Level: HSC

Assignment number	Assignment	Learning outcomes	Instructions (symbol/step)	Evaluation model (Rubrics)					Remarks
				Indicator	Level of performance/Number				
					4	3	2	1	
2 First Chapter: Environmental Chemistry	Gas laws & Behavior of real gas at different condition	<ul style="list-style-type: none"> <li>• Can explain Boyle, Charles's, Gay Lussac law, Avogadro's law, Dalton's partial pressure law &amp; Graham's Diffusion law</li> <li>• Can explain kinetic energy on the basis of postulates of kinetic theory of gas.</li> <li>• Can differentiate between ideal gas &amp; real gas</li> <li>• Can explain the condition at which real gas behaves like ideal gas</li> </ul>	1. Combination of gas laws  2. Explain the condition at which real gas behaves like ideal gas  3. Determine the relation between pressure of gas mixture & mole fraction  d. Mathematical explanation of difference in diffusion rate due to difference in mass of two component gas in gas mixture	Combination of laws regarding pressure, volume, temperature & mole number after mentioning	Proper combination of laws with explanation	Maximum correct combination of laws with explanation	Partial combination of laws with mentioning laws	Mentioning laws	
				Description of volume, pressure & temperature related condition	Proper explanation of conditions	Maximum correct explanation of conditions	Partial explanation of conditions	Mentioning condition	
				Dalton's partial pressure law, partial pressure, total pressure & mole fraction	Proper mathematical deduction with description of law	Maximum correct mathematical deduction with description of law	Description of law	Mentioning law	
				Diffusion law, density, molecular mass & diffusion rate	Proper mathematical deduction with description of law	Maximum correct mathematical deduction with description of law	Description of law	Mentioning law	
				<b>Total</b>					
Allocated number for assignment: 16 N: B: Proper/Complete=80-100%, Maximum Correct= 70-79%, Partial Correct= 50-69%									

Number range	Remarks
13-16	Excellent
11-12	Good
8-10	Average
0-07	Need improvement

## Assignment for the students of H.S.C candidate 2022

**Subject: Higher Mathematics**

**2<sup>st</sup> paper**

**Sub:Code-266**

Ass. No.	Assignment	Learning Outcome	Instruction (Hints/step/dept)	Assessment Rubrics																																																		
<div style="background-color: #e8f5e9; padding: 5px; display: inline-block;">02</div> <div style="background-color: #e8f5e9; padding: 5px; display: inline-block;">Chapter-03 (Complex Number)</div>	$z_1 = -1 + i$ $\& z = p + p^{-1}$ <p>Where,  <math display="block">p = 3(\cos\theta + i\sin\theta)</math></p>	<p>The student will able to-</p> <ul style="list-style-type: none"> <li>Explain modulus and argument of complex number.</li> <li>Explain conjugate complex number.</li> <li>Explain geometrical representation of addition and subtraction of complex number.</li> <li>Explain square root , cube root of unity and their properties of complex number.</li> </ul>	<p>(a). If <math>\frac{z_1}{3+4i} = m + in</math>  <b>Find the value of</b>  <math>m^4 - m^2n^2 + n^4</math></p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #c8e6c9;"> <th colspan="2" style="text-align: center;">Instruction</th> <th style="text-align: center;">Mar ks</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center; vertical-align: middle;">(a)</td> <td>* Find the value.</td> <td style="text-align: center;">02</td> </tr> <tr> <td>* Find the value of m and n.</td> <td style="text-align: center;">01</td> </tr> <tr> <td rowspan="3" style="text-align: center; vertical-align: middle;">(b)</td> <td>* Find the polar from.</td> <td style="text-align: center;">03</td> </tr> <tr> <td>* Find the modulus and argument.</td> <td style="text-align: center;">02</td> </tr> <tr> <td>* Find the modulus.</td> <td style="text-align: center;">01</td> </tr> <tr> <td rowspan="2" style="text-align: center; vertical-align: middle;">(c)</td> <td>* Find square root.</td> <td style="text-align: center;">02</td> </tr> <tr> <td>* Applying the formula.</td> <td style="text-align: center;">01</td> </tr> <tr> <td rowspan="3" style="text-align: center; vertical-align: middle;">(d)</td> <td>* Prove.</td> <td style="text-align: center;">03</td> </tr> <tr> <td>* Equating the real and imaginary part.</td> <td style="text-align: center;">02</td> </tr> <tr> <td>* Express as the form of <math>z = x + iy</math>.</td> <td style="text-align: center;">01</td> </tr> <tr> <td rowspan="4" style="text-align: center; vertical-align: middle;">(e)</td> <td>* Find <math>\sqrt[6]{a}</math></td> <td style="text-align: center;">04</td> </tr> <tr> <td>* Find the value of x and y.</td> <td style="text-align: center;">03</td> </tr> <tr> <td>* Factories.</td> <td style="text-align: center;">02</td> </tr> <tr> <td>* Find the value of a.</td> <td style="text-align: center;">01</td> </tr> <tr> <td colspan="4" style="text-align: right;"><b>Total marks = 14</b></td> <td></td> <td></td> </tr> <tr> <td colspan="5" style="text-align: center;"><b>* Outstanding (11-14) * Excellent(9-10) * Good(7-8) * Need Improvement(0-6)</b></td> <td></td> </tr> </tbody> </table>	Instruction		Mar ks	(a)	* Find the value.	02	* Find the value of m and n.	01	(b)	* Find the polar from.	03	* Find the modulus and argument.	02	* Find the modulus.	01	(c)	* Find square root.	02	* Applying the formula.	01	(d)	* Prove.	03	* Equating the real and imaginary part.	02	* Express as the form of $z = x + iy$ .	01	(e)	* Find $\sqrt[6]{a}$	04	* Find the value of x and y.	03	* Factories.	02	* Find the value of a.	01	<b>Total marks = 14</b>						<b>* Outstanding (11-14) * Excellent(9-10) * Good(7-8) * Need Improvement(0-6)</b>						<p>(a) Find the value of <math>m^4 - m^2n^2 + n^4</math></p> <p>(b) Find the polar from of <math>\bar{z}_1</math></p> <p>(c) Find the value of <math>\sqrt{z_1}</math></p> <p>(d) If <math>z = x + iy</math>  Show that, <math>\frac{9x^2}{100} + \frac{9y^2}{64} = 1</math></p> <p>(e) If <math>\frac{1}{z}(z_1 + \sqrt{z_1}) = a</math>  <b>Find the value of <math>\sqrt[6]{a}</math></b></p>	<p>(a) * Find the value. (02)  * Find the value of m and n. (01)</p> <p>(b) * Find the polar from. (03)  * Find the modulus and argument. (02)  * Find the modulus. (01)</p> <p>(c) * Find square root. (02)  * Applying the formula. (01)</p> <p>(d) * Prove. (03)  * Equating the real and imaginary part. (02)  * Express as the form of <math>z = x + iy</math>. (01)</p> <p>(e) * Find <math>\sqrt[6]{a}</math> (04)  * Find the value of x and y. (03)  * Factories. (02)  * Find the value of a. (01)</p> <p style="text-align: right;"><b>Total marks = 14</b></p>
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