SHRI RAMSWAROOP MEMORIAL UNIVERSITY

End Semester Examination (2021-22)-Odd Semester

DIPLOMA (CE/EE) – I Year (I Sem)	
Course Name: Chemistry	**Code: DCY 1001**
Time: 02 Hours	**Max Marks: 60**

University Roll No.															
(To be filled by the Student)															

Note: Please read instructions carefully:

a) *The question paper has 03 sections and it is compulsory to attempt all sections.*

b) *All questions of Section A are compulsory; questions in Section B and C contain choice.*

Section A: Very Short Answer type Questions **Attempt all the questions.**		**BL**	**CLO**	**Marks (10)**
1.	Name the various blocks in periodic table with the general electronic configuration of each block.	BL1	CLO1	02
2.	Define the octane number and catane number of fuel.	BL1	CLO3	02
3.	What is pH? Give its industrial importance.	BL1	CLO2	02
4.	Explain the preparation of Bakelite polymer.	BL5	CLO4	02
5.	What is the hardness? Mention the relationship between units of hardness.	BL1	CLO4	02
Section B: Short Answer Type Questions **Attempt any 03 out of 06 questions.**		**BL**	**CLO**	**Marks (30)**
1.	Define the atom with the help of Bohr's atomic model.	BL1	CLO1	10
2.	0.250 gm of copper was deposited on passes of a current of 0.5 ampere for 45 minutes through a solution of copper sulphate. Calculate the atomic mass of copper. (1 Faraday=96500 Coulomb)	BL3	CLO2	10
3.	Calculate the GCV and NCV of 0.834 gm of fuel on complete combustion in excess of oxygen increased the temperature of water in calorimeter from 14.36^{o}C to 18.10^{o}C. The mass of water in calorimeter was found to be 1365 gm, if the water equivalent of calorimeter is 135gm.	BL3	CLO3	10

4.	Define the lubricant with their classification and mechanism of lubrication.	BL1	CLO4	10
5.	Sketch diagram with geometrical shape and angle of following molecules: NH_3, H_2O, CO_3^{-2}, SF_6, PCl_5.	BL4	CLO1	10
6.	A sample of water for analysis has been found to contain the following: $Ca(HCO_3)_2$=16 mg/l, $Mg(HCO_3)_2$=7.5 mg/l, $CaSO_4$=13.6 mg/l, $MgCl_2$=9 mg/l. Calculate the permanent and temporary hardness?	BL3	CLO4	10
Section C: Long Answer Type Questions/Case Study **Attempt any 01 out of 04 questions.**		**BL**	**CLO**	**Marks (20)**
1.	Define the chemical bonding and explain their classification with suitable examples.	BL1	CLO1	20
2.	Explain the pH and p OH. Calculate the pH value of 0.00025 mol of H_2SO_4 solution.	BL5	CLO2	20
3.	Calculate the weight and volume of air required for complete combustion of following compounds in one kilogram of coal. C=58 %, H=6%, O=8%, CH_4=10%, C_2H_6=7% and ash=5%.	BL3	CLO3	20
4.	What is corrosion? Explain the mechanism of electrochemical theory of corrosion.	BL1	CLO4	20
