Roll No. _____

END SEMESTER EXAMINATION
SEMESTER- I (New Course)

COURSE CODE : BS-105 **DURATION : 3 (THREE)HRS**
COURSE TITLE : APPLIED CHEMISTRY **MAXIMUM MARKS : 60**
SESSION : JULY- DEC'2021 **PASS MARKS : 40 %**

NOTE: *1. Attempt any 4 (four) questions.*
3. Mark for each question is shown against it.
4. Assume suitable logical data wherever necessary.

1.	**(a)**	Discuss the Rutherford model of atom.	**(4)**
	(b)	Write a short note on hydrogen bonding.	**(3)**
	(c)	What is an ionic bond? Explain its formation by taking the example of sodium and chlorine atoms.	**(1+3)**
	(d)	What are the points of difference between ionic and covalent bond.	**(4)**
2.	**(a)**	What is hardness? What are the different types? Explain the causes of hardness of water.	**(1+1+3)**
	(b)	Describe the Zeolite process of water treatment.	**(5)**
	(c)	Write five characteristic properties of good lubricant.	**(5)**
3.	**(a)**	Discuss the process of extraction of iron (Fe) from haematite ore using blast furnace.	**(7)**
	(b)	Discuss the Roasting and Smelting process involved in metal extraction.	**(2½x2)**
	(c)	Define the following (i) Molarity (ii) Electrolytes (iii) Octane number	**(3)**
4.	**(a)**	Define polymer. Discuss the vulcanization of rubber.	**(1+3)**
	(b)	Define calorific value. Compare the properties of solid, liquid and gaseous fuel.	**(2+5)**
	(c)	Define and classify refractories with examples.	**(1+3)**
5.	**(a)**	What is Portland cement? Write the characteristics of its constituents.	**(2+4)**
	(b)	Write the electronic configuration of Chromium (Cr) and Nickel (Ni).	**(2+2)**
	(c)	Define plastics. Write the difference between thermo plastics and thermosetting plastics.	**(1+4)**
6.	Write short notes on		**(5x3)**
	(a)	Scale and sludge formation.	
	(b)	Aufbau Principle and Pauli's exclusion principle	
	(c)	Proximate analysis of coal.	

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