

**DIPLOMA OF VOCATION****Industrial Electronics****Subject: Chemistry****Subject Code: CHM-301****Semester: Second****July 2022****Theory (External): 35 Marks****Time: 03 Hours****Instructions to the Students**

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 1 marks.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

**Roll Number**

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**SECTION -A (SHORT/OBJECTIVE TYPE QUESTIONS)**  
(10x1=10 Marks)

- A. What is specific gravity? Is it different for different substances?
- B. What is surface tension?
- C. What is the difference between Sigma and Pi bond?
- D. What is the quantum number? What is its importance in atomic model?
- E. What do you understand from electron affinity?
- F. What is the main difference between s, p, d and f blocks in the atomic model?
- G. What is the difference between hard and soft water?
- H. What do you understand from TDS? How TDS is measured?
- I. What is corrosion? What is the difference between rusting and corrosion?
- J. What are the main advantages of polymerization?

**SECTION -B (ESSAY TYPE QUESTIONS)**  
(5x5=25 Marks)

1. What are the main differences between compound and mixture? Explain with suitable examples. Also, explain the role of energy in making compounds and mixtures.

2. What is Bohr's model of the atom? Explain it with suitable diagrams. What are the limitations of Bohr's model of the atom?
3. Explain the arrangements of elements in the periodic table. Explain the variation of electronegativity along the rows and columns in the periodic table.
4. What are the desired properties of lubricants? Discuss in detail with suitable data and diagrams.
5. What is the difference between an addition polymerization and a condensation polymerization? Explain their uses in modern industries with suitable examples.
6. Why lubrication is needed in mechanical components? How lubrication is helpful in preventing corrosion, in addition, to wear and tear? Is it possible to use water as a lubricant? If yes how?
7. How chemical formula for different compounds is calculated? Explain with some suitable examples. Also, explain the role of the periodic table in estimating the chemical behavior of elements.
8. What is the role of surface tension and viscosity in lubrication? Insert suitable diagrams wherever required. What are SI units surface tension and viscosity?

==END OF PAPER==