ANNEXURE- I
CHEMISTRY
(Common for all branches of Diploma in Engineering)

1. Atomic Structure: Introduction-Fundamental particles – Bohr's theory – Quantum numbers —Aufbau principle – Hund's rule – Pauli's exclusion principle- Electronic configurations of elements up to atomic number20,shapes of s,p,d orbitals.

2. Chemical Bonding:
Introduction – types of chemical bonds – Ionic bond taking example of NaCl. characteristics of ionic compounds and covalent bond taking example H_2, O_2 ,N_2, .characteristics of covalent compounds.

3. Solutions:
Introduction solution classification of solutions, solute, solvent, concentration, mole concept–Molarity,–Normality, equivalent weight using acids, bases and salts, numerical problems on Molarity and Normality.

4. Acids and Bases:
Introduction – theories of acids and bases –Arrhenius. acid base theory – Ionic product of water - P^H and related numerical problems – buffers solutions –Applications.

5. Electrochemistry:
Conductors, insulators, electrolytes–electrolysis- Galvanic cell .

6. Water Technology:
Introduction –soft and hard water – causes of hardness – types of hardness – disadvantages of hardwater– degree of Hardness, units – softening methods –ion exchange process .

7. Corrosion:
Introduction- factors influencing corrosion - electrochemical theory of corrosion- composition cell, stress cell and concentration cells– rusting of iron and its mechanism – prevention of corrosion by a) coating methods, b)cathodic protection(sacrificial and impressive voltage methods).

8. Polymers:
Introduction – polymerisation – types of polymerisation – addition, condensation with examples–plastics–.-preparation and uses of the following plastics : 2. PVC 3. Teflon 4. Polystyrene . Elastomers – Buna-s, Neoprene rubber and their uses.

9. Fuels:
Definition and classification of fuels based on occurrence – composition and uses of fuels 1. bio gas

10. Environmental chemistry

Introduction – environment –understand the terms lithosphere, hydrosphere, atmosphere bio sphere, biotic component, energy component pollutant, receptor, sink, particulate, DO, BOD, Threshold limit value, COD- Air pollution - causes-Effects –acid rain, greenhouse effect –ozone depletion – control of Air pollution – Water pollution – causes –effects– control measures.

ANNEXURE- II

Number of Questions to be Set Unit Wise(TOTAL25)

UNIT No	Topic	Marks
1.	Atomic Structure	3
2.	Chemical Bonding	2
3.	Solutions	3
4.	Acids and Bases	2
5.	Electrochemistry	3
6.	Water Technology	3
7.	Corrosion	2
8.	Polymers	4
9.	Fuels	1
10.	Environmental Chemistry	2
Total		25

ANNEXURE -III
MODELQUESTIONSFORCHEMISTRY

1. The normality of oxalic acid solution is found to be 0.05N. How many grams of oxalic acid mispresenting 100 ml of solution.
   1)1.26
   2)12.6
   3)126
   4)0.126

2. Which of the following is responsible for temporary hardness of water
   1)$CaCO_3$
   2) $CaCl_2$
   3) $CaSO_4$
   4) $Ca(HCO_3)_2$