

S.B. Roll No.....

**APPLIED CHEMISTRY-I**  
**1<sup>st</sup> EXAM/Common/2555/0451/May'17**

**DURATION: 3 hrs**

**M.MARKS: 75**

**SECTION- A**

**Q. 1 Fill in the blanks.**

**8x1=8**

- a. Dimensional formula of force is \_\_\_\_\_
- b. Units of molarity are \_\_\_\_\_ -
- c. M shell has \_\_\_\_\_ sub shells.
- d. Neutron was discovered by \_\_\_\_\_
- e. Chemical name of permanganate is \_\_\_\_\_
- f. A base is a proton \_\_\_\_\_
- g. Anions are \_\_\_\_\_ charged ions.
- h. The functional group of amide is \_\_\_\_\_

**State True or False.**

**7x1=7**

- i. Ions are neutral particles.
- j. There are 18 vertical columns in the periodic table.
- k. No two electrons can have same set of four quantum numbers .
- l. Soft water does not give lather with soap.
- m. Degree of ionisation decreases with dilution .
- n. Oxidation and reduction go hand in hand .
- o. Alkenes are unsaturated hydrocarbons.

**SECTION: B**

**Q2 Attempt any ten questions.**

**10x3=30**

- a. Give three limitations of a chemical equation
- b. Calculate the actual mass of one atom of carbon.
- c. Define the terms Electron, Proton and Neutron.
- d. Define covalent bonding with examples.
- e. What are the advantages of long form of periodic table?
- f. Differentiate between temporary and permanent hardness of water.
- g. Explain scale and sludge formation.
- h. What is Boyle's law, Avogadro's law and Absolute zero?
- i. What are strong and weak electrolytes?
- j. Calculate the pH value of 0.001 M HCL.
- k. Explain Faraday's second law of electrolysis.
- l. What are primary and secondary cell?
- m. What is the formula of (a) Acetic acid (b) Acetaldehyde (c) Acetone?

**SECTION: C**

**Attempt any three questions.**

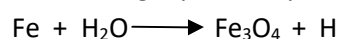
**3x10=30**

**Q3. (a) Give the main features of Bohr's atomic model.**

**5**

**(b) Balance the following equation by hit and trial method.**

**5**



**Q4. (a) Name the four quantum numbers and explain the significance of each quantum Numbers**

**5**

**(b) Explain Ionic bond with examples.**

**5**

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- Q5.** (a) A sample of hard water is found to contain 285mg of  $\text{MgCl}_2/\text{L}$ . What will be its hardness in ppm? (Mg =24, CL= 35.5, O=16, C=12 Ca = 40 ) **5**  
(b) What are the various factors affecting the degree of ionisation? **5**
- Q6.** (a) How will you remove hardness of water by Permutit process? **5**  
(b) Explain oxidation and reduction with examples **3**  
(c) Explain pH scale **2**
- Q7.** (a) Differentiate between saturated and unsaturated hydrocarbons by giving examples. **5**  
(b) Give the general formula of alkane, alkene and alkyne. **3**  
(c) Explain the term catenation. **2**