

S.B. Roll No. _____

BASIC CHEMISTRY
1st Exam/MLT/4179/Dec-2011

Duration: 3 Hrs.

Max. Marks: 75

Section-A

Q1. (A) Fill in the blanks:

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- (i) Dimensional formula of density is _____
- (ii) A chemical equation should represent a _____ chemical change
- (iii) Electronic configuration of sodium is _____
- (iv) In the periodic table vertical rows are called _____
- (v) _____ hardness of water can be removed by mere boiling.
- (vi) Sterilization is done by _____
- (vii) 1 degree Clark means _____

(B) State true or false:

8

- (i) More acidic is the solution, greater is its PH
- (ii) An aqueous solution whose PH=1.2 is acidic.
- (iii) Blood is a buffer solution.
- (iv) A reducing agent is always reduced.
- (v) In a redox reaction the oxidizing agent is oxidized.
- (vi) Reduction involves loss of electrons
- (vii) The movement of colloidal particles in solution cannot be examined.
- (viii) The zig zag motion of colloidal particles in solution is called Tyndall effect.

Section-B

Q2. Attempt any ten questions

10x3=30

- (i) What are the essentials of a chemical equation
- (ii) Calculate the molarity of a solution containing 1.00gm of NaOH in 250ml of solution.
- (iii) Explain in brief Heisenberg's uncertainty principle.
- (iv) Give brief idea of modern periodic law
- (v) Define degree of hardness of water with reference (a) Clark's degree (b) PPM
- (vi) Write a brief note on Hund's rule.
- (vii) What is redox reaction? Give one example.
- (viii) Write in brief about electroplating.
- (ix) Explain in brief degree of ionization.
- (x) What is meant by PH value?
- (xi) Write a brief note on absorption.

Section-C

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

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(b) Name the different blocks in the periodic table. Give the general electronic configuration of each.

OR

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(a) What are the implications of a chemical equation?

5

(b) Explain ionic bond and covalent bond formation

5

Q4 (a) Explain soap titration method for determination of degree of hardness of water.

6

(b) Explain different method for purification of water for drinking purposes.

4

OR

(a) Explain degree of ionization, common ion effect and buffer action of a buffer solution

6

(b) Discuss bronsted Lowry concept of acids and bases.

4

Q5 (a) Define and explain Faraday's laws of electrolysis.

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(b) Explain Brownian motion, electrophoresis and Tyndall effect.

5

OR

(a) Describe the various methods employed in the preparation of colloids.

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(b) An electric current was passed through voltameter cells containing

5

(i) Copper Sulphate (using copper electrodes)

(ii) Silver Nitrate (using silver anode)

The increase in weight of cathodes in two cases was respectively 0.189gm and 0.648gm.
Calculate the chemical equivalent of copper, taking that of silver as 108.