NP-108

December-2015

B.Sc. (Fire & Safety), Sem.-I

CC-102 : Applied Chemistry

Time : 3 Hours] [**Max. Marks : 70**

1. Answer the following :

   (a) Write a note on Tri-angle and tetra-hedron of fire   **7**

   OR

   Write a note on premixed flame.

   (b) Give definition and mechanism of chemical reaction.   **7**

   OR

   How does combustion spreads ?

2. Answer the following :

   (a) Derive the relation between the quality of heat (Q), specific heat (C), mass of the body (m) and temperature difference (Δt).   **7**

   OR

   Write a note on Laminar vs Turbulent flames.

   (b) Write a note on Premixed vs Diffusion flames.   **7**

   OR

   Explain the heat transfer by conduction.

3. Answer the following :

   (a) Give chemical mechanism of combustion of carbon for methane oxygen premixed flame.   **7**

   OR

   Give the fire properties of hydrochloric acid.

   (b) Give the fire properties of oxygen.   **7**

   OR

   Give the fire properties of Sulphuric acid.

4. Answer the following :

    (a) Write a note on Arrhenius Equation.   **7**

                OR

        Which factors influence the rate of reaction ?

    (b) Give kinetic equation and unit for first order reaction.   **7**

                OR

        Write a note on thermal explosion theory.

5. Answer the following in brief :   **14**

    (1) Define : Flash point

    (2) Define: Latent Heat

    (3) Define: Anti-oxidant

    (4) Give difference between Diflagration & Detonation.

    (5) Give the Dulong's Formula.

    (6) Give any two examples of normally combustible materials.

    (7) Give the name of open flames source responsible for ignition.

    (8) Write the chemical formula of carbon dioxide.

    (9) What is the aim of chemical kinetics ?

    (10) Write the unit of k for first order reaction.

    (11) Write the Arrhenius equation.

    (12) Write: True or False, Latent heat of water is 540 cal./ gm of J/kg.

    (13) The flash point of methanol is _____° C.

    (14) $Cl\cdot + Cl\cdot$ ----------$\longrightarrow$ _____.

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