SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
B.Sc. END SEMESTER EXAMINATIONS APRIL-2022
SEMESTER - II
20UCHCT2003 - General Chemistry -III

Total Duration : 3 Hrs. **Total Marks : 60**

Section A

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Explain Markovnikoff 's and anti Marknovnikoff 's addition with examples.
2. Derive the equation for the work done in irreversible and reversible isothermal expansion of a gas.
3. C_2H_2(g), C (graphite), and H_2(g) have molar heats of combustion of 210.62 Kcal, 84.05 Kcal, and 69.32 Kcal, respectively. Calculate the standard heat of formation of C_2H_2(g).
4. a) What is meant by significant figures with an examples? (2)
   b) Differentiate the accuracy and precession (3)
5. a) Why NBS is used for allylic halogenation?
   b) Give the commercial importance of alkynes (3+2)
6. a) Derive a relation between Cp&Cv for an ideal gas (3)
   b) Distinguish between intensive property and extensive property (2)
7. Determine the enthalpy of reaction for the following:H_2(g) + $\frac{1}{2}$ O_2(g) - - -> H_2O(g)Using the following bond enthalpies (in kJ/mol): H-H(432); O = O(496); H-O(463)
8. Discuss the methods of minimizing errors.

Section B

Answer any **THREE** questions $(3 \times 10 = 30$ Marks)

9. Explain the following reactions with suitable example.
   i)Ozonolysis
   ii) dehydrogenation
   iii) Diels-Alder reaction
   iv) dehydration
   v) hydroboration
10. a) State and explain Hoffmann's rule with example.
    b) Discuss the preparation & properties of alkynes (5+5)

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11. a) Define Joule-Thomson effect (2)
    b) Describe the various thermodynamic systems (6)
    c) State zeroth law of thermodynamics (2)
12. Deduce the variation of enthalpy of a reaction with temperature (8)
    Mention the applications of Hess Law (2)
13. Replicate samples of a silicon alloy are analysed and determined to contain 95.61,95.67, 95.71 & 95.60 % Ag. Calculate
    a)mean b)median c)average deviation d) coefficient ofvariation

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