V.P. & R.P.T.P. SCIENCE COLLEGE

B.Sc. (SEMESTER – I) Internal Test Exam

General Chemistry - I: US01CCHE21 **Time: 1:00 pm to 2:15 pm**
Date: 03-10-2019, Thursday **Total Marks: 25**

Q-1. Choose the correct option (Multiple choice questions). (05)

(i) Which of the following compound is alkenol?
(a) 2-propanol (b) 2-butenal (c) Vinyl chloride (d) Allyl alcohol

(ii) Ozonolysis of 2-pentyne produces _____.
(a) propanoic acid (b) acetic acid (c) both 'a' & 'b' (d) none of these

(iii) Which of the following pair has not diagonal relationship?
(a) Li-Mg (b) Be-Al (c) N-S (d) C-Si

(iv) For given value of 'n' the degree of penetration of electron is least one for _____orbital.
(a) d (b) p (c) s (d) f

(v) The analysis in which we find out selected constituents of the sample is known as _____.
(a) Proximate analysis (b) Partial analysis
(c) Trace constituent analysis (d) Complete analysis

Q-2 (a) Define: (i) free radical (ii) chain reaction. (05)
Give reaction and reaction mechanism of free radical chlorination of Methane.

OR

Q-2 (a) Explain: (i) Boiling point of cis-2-butene is higher than trans-2-butene. (05)
(ii) 1-Butyne gives white precipitation with Tollen's reagent while 2-butyne does not.

Q-3 (a) Describe long form of periodic table with suitable diagram. (05)

OR

Q-3 (a) Discuss the applications of electronegativity. (05)

Q-4 (a) Explain selective precipitation for a mixture of 0.1M Zn^{+2} and 0.1M Fe^{+2} solution. (05)
Also explain the role of buffer solution to maintain sulfide ion concentration during this precipitation. Given: K_{sp} (ZnS) = 4.5 x 10^{-24}, K_{sp} (FeS) = 1 x 10^{-19} and K_a (H_2S) = 1.1 x 10^{-21}.

OR

Q-4 (a) Discuss the Arrhenius, Lowry-Bronsted and Lewis theories of acids and bases with suitable examples. Write limitations also. (05)

Q-5 (a) Define : (i) Accuracy (ii) Precision. (05)
Give the applications of chemical analysis.

OR

Q-5 (a) Define : Error. How will you minimize errors? (05)