KUVEMPU UNIVERSITY

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TOPICS FOR INTERNAL ASSESSMENT ASSIGNMENTS: 2016-17

Course: M.Sc. CHEMISTRY (Previous)

Important Notes: (1) Students are advised to read the separate enclosed instructions before beginning the writing of assignments. (2) Out of 15 Internal Assignment marks per paper, 5 marks will be awarded for regularity (attendance) to Counseling/ Contact Programme classes pertaining to the paper. Therefore, the topics given below are only for 10 marks each paper.

Answer ANY ONE Question (1 or 2) from Each Paper. Each question carries TEN marks.

Paper I: Analytical Chemistry

1. a) What is chromatography? Explain the Rate theory and Plate theory of Chromatography.

   b) Describe the principle and applications of HPLC.
2. a) Explain the principles involved in acid base and complexometric titrations.

   b) Explain the theory of solvent extraction

Paper II: Inorganic Chemistry

1. What are Interhalogen compounds? Explain the properties and structure of cyanogen & thiocyanogen..
2. a) What are noble gas compounds? Discuss the structure and bonding in XeF_6 and $X_2O_2F_2$.

   b) Briefly discuss about various defects in crystals.

Paper III: Organic Chemistry

1. Describe the stereochemistry and mechanism of SN1 and SN2 reaction with suitable examples.
2. a) What is Chirality? Write a note on elements of symmetry.

   b) Explain the formation, stability, structure and reaction of carbanion.

Paper IV: Physical Chemistry

1. Explain nuclear fission and fusion reactions with examples.
2. a) Deduce the expression for the work done in isothermal compression of an ideal gas.

   b) Describe construction, working and application of H_2-O_2 fuel cell.

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