



EASTERN UNIVERSITY, SRI LANKA.
FIRST EXAMINATION IN SCIENCE 2005/2006 & 2006/2007 - REPEAT
FIRST SEMESTER (AUG/SEPT 2007)
CH 101 PERIODICITY AND BONDING.

Time allowed: **ONE Hour**

Answer all the questions

The use of a non-programmable calculator is permitted



You may find the following data useful.

Atomic no of As is 35 and Se is 34

1. a) (i) Write molecular orbital electronic configurations of N_2 , N_2^+ and N_2^- .
- (ii) Arrange, giving reasons, the species N_2 , N_2^+ and N_2^- in order of increasing bond length and increasing bond energy.
- (iii) Indicate their magnetic property.
- b) Draw the Lewis structure of each of the following molecules and predict the shapes of the molecules using VSEPR theory.
- (i) AsF_5 (ii) OF_2
- 2) a) Predict the geometry of the following molecules using the concept of hybridization.
- (i) SeF_6 (ii) BeH_2
- b) (i) Write the electronic configuration of phosphorus atom (atomic number is 15) and give the quantum numbers n , l , m_l and m_s for each of the unpaired electrons.
- (ii) Explain the following, giving an example of each.
- a) Pauli's Exclusion principle
b) Hund's rule

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