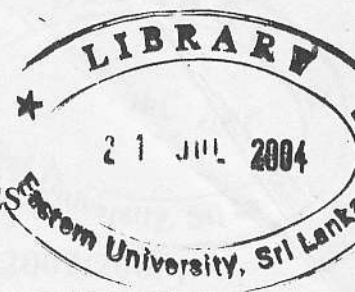


EASTERN UNIVERSITY, SRI LANKA
DEPARTMENT OF CHEMISTRY
SECOND YEAR IN SCIENCE
SECOND SEMESTER 2002/2003 (2004)
CH 205 BORON CHEMISTRY AND SILICATES



Time: 01 hour

Answer all the parts

1. (a) State the Wade's rule.
- (b) Discuss the type of bonding and structure in each of the following boron compounds, using Wade's rule.
- (i) B_5H_{11} (ii) B_4H_{10} (iii) $C_2B_4H_6$
- (c) How can the following transformation be effected through organo-metallic intermediate(s)?



- 2) (a) How silicates can be prepared? Explain using simple chemical equations.
- (b) What is the evidence that exist to describe the tetrahedral structure of the silicate minerals.
- (c) Briefly describe the structure of **any three** of the following
- (i) Willemite – Zn_2SiO_4
- (ii) Tremolite – $Ca_2Mg_5(Si_8O_{22})(OH)_2$
- (iii) Wollastonite – $Ca_3(Si_3O_9)$
- (iv) Sodalite – $Na_8(Al_6Si_6O_{24})C_{12}$
- (d) (i) Name the silicate mineral, which is commonly found in the igneous rock.
- (ii) Explain the classification of the above mineral with suitable examples.
