



Eastern University, Sri Lanka

Second Year Second Semester Examination in Science-2010/2011

(April/ May 2012)

CH 205 Boron Chemistry and Silicates

(Proper and Repeat)

Answer all questions

Time: 01 hour

1. (a) Briefly explain the Wade's rule

(10 Marks)

(b) Place the each of the following molecules/ions in the correct class.

i. $B_5H_{12}^-$ ii. $B_3C_2H_5$ iii. B_5H_{11}

(30 Marks)

(c) Derive the possible structure (s) of the following boron compounds using Wade's rule and draw the structure by indicating all the bonds.

i. B_5H_{11} ii. B_6H_{10}

(20 Marks)

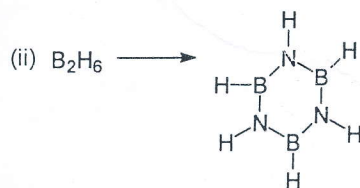
(d) Derive the different 'styx' numbers possible for B_5H_{11}

(i) Choose the most likely 'styx' number

(ii) Draw the possible structure of B_5H_{11}

(20 Marks)

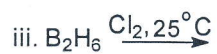
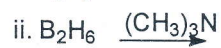
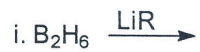
(e) Show by means of equations how the following transformations could be done.



(20 Marks)

Contd...

2. (a) Write down the end product (s) of the following reactions.



(15 Marks)

(b) Classify the silicate minerals by giving general formulas and one example.

(35 Marks)

(c) Describe the double chain silicates using suitable examples.

(50 Marks)