

Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Department of Science and Technology
300 Level 2nd Semester Examination – December/January 2017-2018
MRT 311-2 Physics and Chemistry of Minerals



Part B

Use separate answer book to answer following questions

Answer any two (02) questions

01) Discuss the factors affecting transmitted color produced by crystal field transition.

(30 mark)

02) Given below is an EMPA result of Feldspar.

Oxide	Molecular weight (g/mol)	Weight %
SiO ₂	60.084	60.76
TiO ₂	79.866	0.00
Al ₂ O ₃	101.961	23.96
Fe ₂ O ₃	159.688	0.08
FeO	71.844	0.00
MgO	40.304	0.00
CaO	56.077	0.84
Na ₂ O	61.979	5.54
K ₂ O	94.196	8.12
H ₂ O ⁺	18.015	0.00

a. Recalculate its chemical formula.

(20 mark)

b. Comment on the chemistry of the feldspars with the help of a ternary graph.

(10 mark)

03) Compare and contrast following.

a. Schottky defect and Frenkel Defect

b. Displacive Polymorphism and Reconstructive Polymorphism

c. Crystal Structure of Hematite and Ilmenite

(30 mark)