Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Department of Science and Technology
200 Level 1st Semester Examination – Sept. / Oct. 2015
MRT 213-2 Mineralogy and Petrology II

Uva Wellassa University

Instructions to candidates
Duration: 02 hours
Number of questions: 04
Answer all Questions
Mark allocation: 400 mark

1.

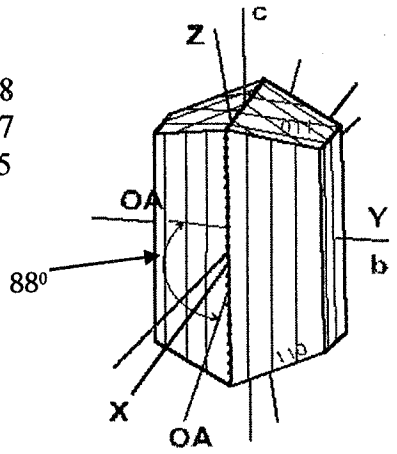
a. Briefly explain following terms.

i. Relief
ii. Double refraction
iii. Isotropic minerals
iv. Anisotropic minerals
v. Retardation
vi. Birefringence
vii. Pleochroism
viii. Optic axis of a mineral
ix. 2V angle of a mineral
x. Extinction

(8×10=80 mark)

b. Answer following questions based on the given optical orientation diagram

$\alpha = 1.599\text{-}1.688$
$\beta = 1.612\text{-}1.697$
$\gamma = 1.622\text{-}1.705$



i. What is the crystal system the mineral belongs to?
ii. What is the optic sign of the mineral?
iii. What is the maximum birefringence of the mineral?
iv. What is the 2V angle?

(4×5=20 mark)

(Total 100 mark)

29

2.

a. Describe the rock cycle. (15 mark)

b. What is diagenesis? (10 mark)

c. List all the criteria that can be used to identify sedimentary rocks. (15 mark)

d. Summarize the Bowen's reaction series. (15 mark)

e. Explain the possible mechanism of origin of an igneous rock with a porphyritic texture. (15 mark)

f. What is metamorphism? (10 mark)

g. How would you identify metamorphic rocks formed at different metamorphic grades? (20 mark)

(Total 100 mark)

3. Compare and contrast following.

a. Extrusive rocks and intrusive rocks

b. Slate and gneiss

c. Tuff and pumice

d. Granite and basalt

e. Sandstones and quartzite

f. Sandstone and limestone

g. Augen gneiss and mylonite

h. Conglomerate and breccia

i. Marble and dolomite

j. Regional and contact metamorphism (10×10=100 mark)

4. Write short notes on following topics.

a. Sorting

b. Graded bedding

c. Unconformities

d. Charnockites

e. Migmatites

f. Stretching lineation

g. Wentworth Classification

h. Factors controlling the viscosity of magmas

i. Pyroclastic rocks

j. Pegmatite (10×10=100 mark)