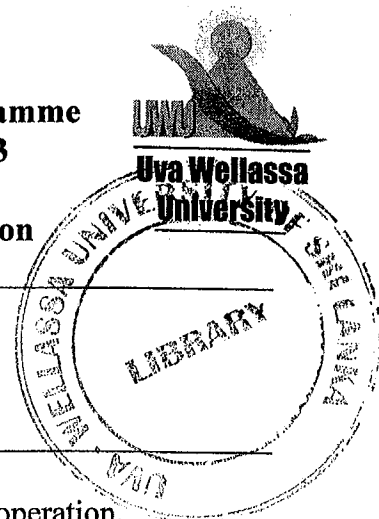


Uva Wellassa University, Sri Lanka
Faculty of Science and Technology
Mineral Resources and Technology Degree Programme
1st Semester Examination – March/April 2013

MRT 464-2 Gem Technology and Value Addition

Number of questions: Five (05)
Answer **all** questions
Time allocation : Two (02) hours
Total marks : 100



1.
 - a. Describe diamond cutting steps with equipment used in each operation. (08 marks)
 - b. Explain why brilliant cut is preferred for diamond. (04 marks)
 - c. With the help of a labeled sketch diagram, explain different facets of a cut diamond. Comment on their crystallographic relationships. (08 marks)

2.
 - a. Discuss American Gem Trade Association (AGTA) guidelines for gem enhancement. (04 marks)
 - b. List major gem enhancement techniques. (04 marks)
 - c. Describe the *geuda* treatment process in detail. (12 marks)

3.
 - a.
 - i. Distinguish between cabochon cut and faceted cut. (04 marks)
 - ii. Give two (02) examples each for gemstones fashioned by above cuts. (04 marks)
 - b. What is the most suitable material for the lap that is used for polishing a sapphire? Give reasons for your selection. (04 marks)
 - c. How does diamond cutting differ from coloured gemstone cutting? (04 marks)

- d. Briefly describe various step cuts used in gemstone fashioning. (04 marks)
4. a. i. What are the major aspects considered in jewellery designing? (06 marks)
- ii. Briefly explain the process of electroplating used in jewellery manufacturing. (06 marks)
- b. Write an account on Sri Lanka's gem industry explaining current status and future prospects. (08 marks)
5. a. What are the main types of gem-setting? (05 marks)
- b. Describe the popular arrangements of gems in rings. (05 marks)
- c. Give an outline of the annealing process. (05 marks)
- d. Discuss the suitability of various metals for jewellery manufacturing. (05 marks)