

Uva Wellassa University, Sri Lanka  
End Semester Examination – February/March 2012



MRT 305-3 Mathematical and Statistical Methods In Mineral Science

Duration: Three (03) hours

Part – A: Two (02) hours | Part – B: One (01) hour

Part - B

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Total five (05) questions

Answer all questions

Answer Part - B in a separate answer book.

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1. Describe how you are going to measure the missing value with the kriging technique. You may use an appropriate example. (20 marks)
2. Define and briefly discuss the following (05 x 4 = 20 marks)
  - a) Random variable
  - b) Spatial continuity
  - c) Stationarity
  - d) Anisotropy
3. With **properly labeled diagrams and relevant equations**, describe the relationship between covariance function and variogram. (20 marks)
4. Providing **labeled diagrams and relevant equations**, describe the differences of Linear, Exponential, Spherical and Gaussian distributions with respect to  $\gamma$ . (20 marks)
5. Briefly describe what each of the following variograms represents. (20 marks)



