RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

B.Sc. (Four year) Degree in Applied Sciences
Fourth Year – Semester I Examination – September/October 2019

COM 4203 - GEOGRAPHIC INFORMATION SYSTEMS

Time : Two (02) hours

This paper consists of two parts, **Part A (Theory)** and **Part B (Practical).**
Answer ALL questions

Part A

1. a) Citing examples explain the Geometric Correction. **(20 marks)**

   b) Using illustrations discuss the State Plane Coordinate System (SPC) used in GIS **(20 marks)**

   c) Explain the Re-sampling methods with equations. **(30 marks)**

   d) Describe the map projection process with illustrations. **(30 marks)**

2. a) How is the geographical features described? **(25 marks)**

   b) Discuss how the Geographic Features are represented digitally in a GIS? **(25 marks)**

   c) Explain the "Spatial Data Types" used in GIS **(25 marks)**

   d) Elucidate the features of a Raster data model. **(25 marks)**

Part B

Read the given instructions carefully and compile the map for the Galgamuwa topographical sheet (Figure 01), as per file names given. All the shape files are in C:\Exam directory and all your work has to be saved in the computer itself C:\Exam\your Index number\ ……shp.

*Do not forget to save your work from time to time.

*Note that the underlined italic names are the files you will have to create.

1. a). The Horowpothana.sid topographical sheet and Fig 1.JPEG file are provided in the C:\Exam folder. Select and add Horowpothana.sid and locate the Maha Wawe.

   b). Geo-reference Fig 01.JPEG and digitize the Maha Wawe and export the shape file to C:Exam as ***Maha Wawe.shp***. Use your name and index number for data bases that has to be prepared.

   c). In the same map locate the B type road and Canals close to the lake. Digitize road type and the canal and show it in your output figure.

   d). Using a point file, name the village; Surunewa and the lake Maha wewa.

   e). Save your project using your name and index number. Your final output should be saved as a tiff file in the C:\Exam folder as ***Maha wewa.tiff*** using a resolution of 300dpi. (Note: ***name*** is the name you use to save the layer Eg. Paddy.shp)

(100 marks)

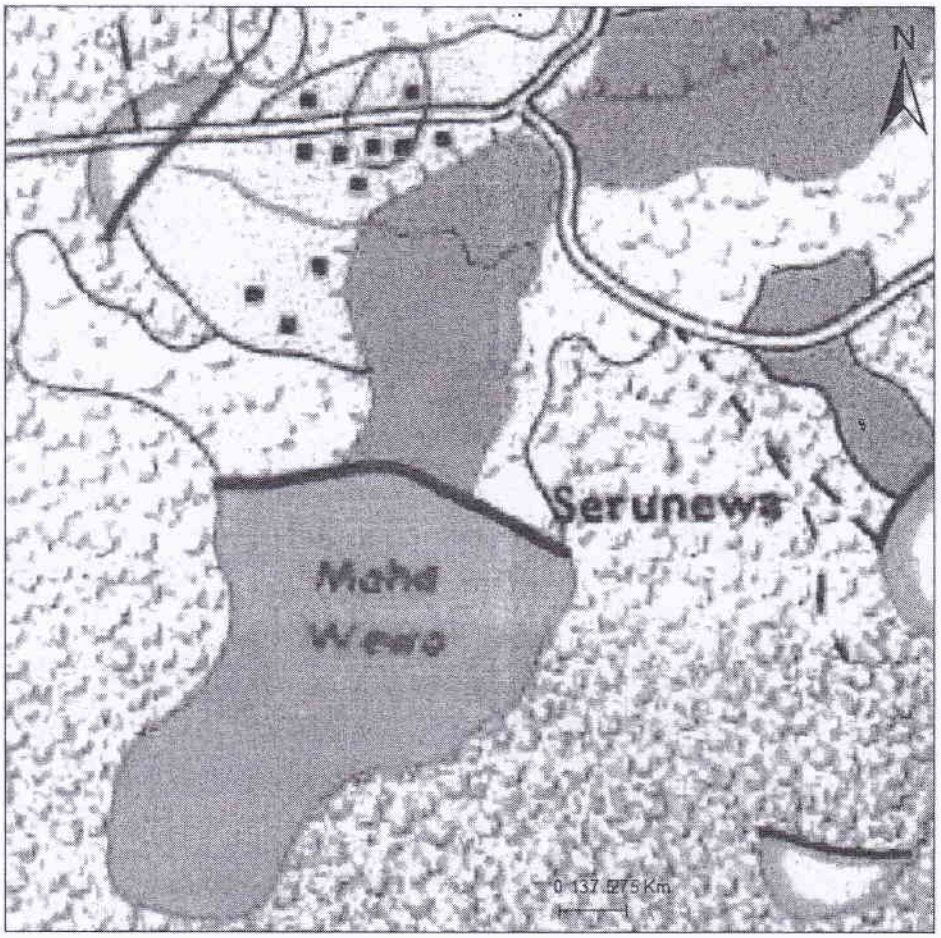

Figure. 01

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