



**RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES**

**B.Sc. (Special) Degree in Information and Communication Technology
Fourth Year – Semester I Examination – September/October 2019**

ICT 4208 - 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)

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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)

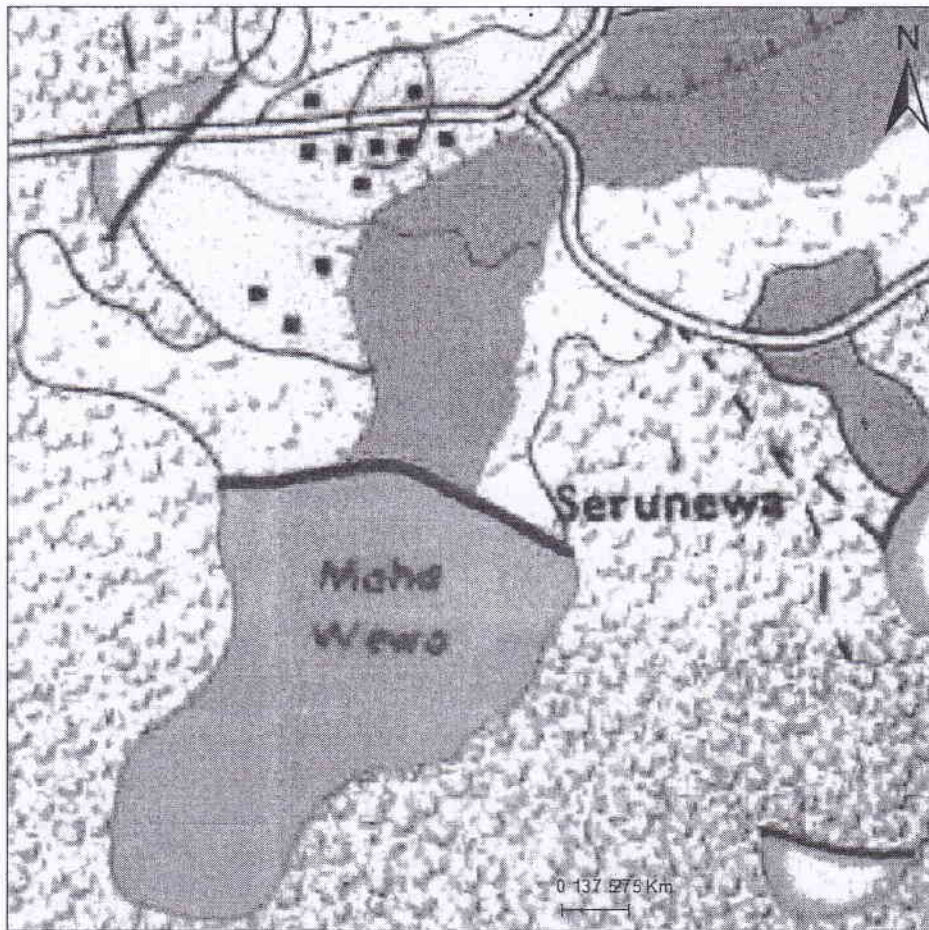


Figure. 01

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