UNIVERSITY OF RUHUNA

BACHELOR OF SCIENCE IN FISHERIES AND MARINE SCIENCES DEGREE

Level II Semester I - July/August 2016

OCG4112 Earth Processes and Morphometric Analysis

Answer Three (03) questions including Question no. 01

Time: 1 ½ hours

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01. a. What is meant by Geographical Information System (GIS)? (05 Marks)

b. What are the sources of errors associated with Global Navigation Satellite System (GNSS) (10 Marks)

c. What is meant by Geomorphometry? (05 Marks)

d. What are the possible ways to create a Digital Elevation Model (DEM) (10 Marks)

e. What are the disadvantages of a gridded DEM? (10 marks)

(Total – 40 marks)

02. Write short notes on **any two (02)** of the followings (15 x 2 **Total - 30 Marks)**

a. Coordinate systems
b. Geometric Dilution of Precision (GDOP) in GNSS
c. Digitizing errors in GIS

03. Explain differences between **any two (02)** of the following with suitable examples or illustrations (15 x 2 **Total 30 Marks**)

a. Spatial data and Attribute data in GIS
b. Creating a flow direction map from the DEM using "Steepest slope" and "Lowest height" methods
c. Vertical Photography and Oblique Photography in Aerial Photography

04. Assume, you are working as a researcher at a Non_Government Organization (NGO) who is dealing with coastal zone planning in Pigeon Island and surrounding area. Your task is to create a coastal zone map which is important for tourists, administrative sectors, police and local people of the area. You will be provided, very recent high resolution satellite image (Spatial Resolution = 50 cm), very old Aerial Photograph, hard map of recent administrative boundary map (up to Grama niladhari level) and a high accuracy GPS only.

Explain how do you create the Coastal Zone Map using available data and field visits. Write down all the important steps in point form.

(30 Marks)

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