# UNIVERSITY OF COLOMBO – SRI LANKA

## FACULTY OF ARTS

### SPECIAL DEGREE EXAMINATION IN ARTS (GEOGRAPHY) – PART I

### FIRST SEMESTER FINAL EXAMINATION – 2019

## GYG 2129 – Locational Analysis

## Two hours (02)

Answer **three (03)** questions. Part I is compulsory. Selecting at least **one question** from Part II and Part III.

The use of calculators is allowed.

## Part I

01. i) Answer the following questions, using the information provided in Figures 1 and 2.

    a) List out the different types of data and information in Figure 1.

    (02 Marks)

    b) Explain the importance of using the data and information listed in 1.i(a), in assessing distribution differences of water quality in the selected area.

    (02 Marks)

    c) Discuss the distribution of Cadmium concentration in water and sediments in the Negombo lagoon using the information provided in Figure 2.

    (04 Marks)

    ii)  a) Explain briefly how the questions "What, When and How" help you think spatially.

    (02 Marks)

    b) Draw a diagram and explain different methods that you can use to answer the question "Where?" from a geographical point of view. Consider the Faculty of Arts, University of Colombo as the place of location.

    (02 Marks)

    c) Discuss how technology can help the general public to use the locational information in their day to day activities with examples.
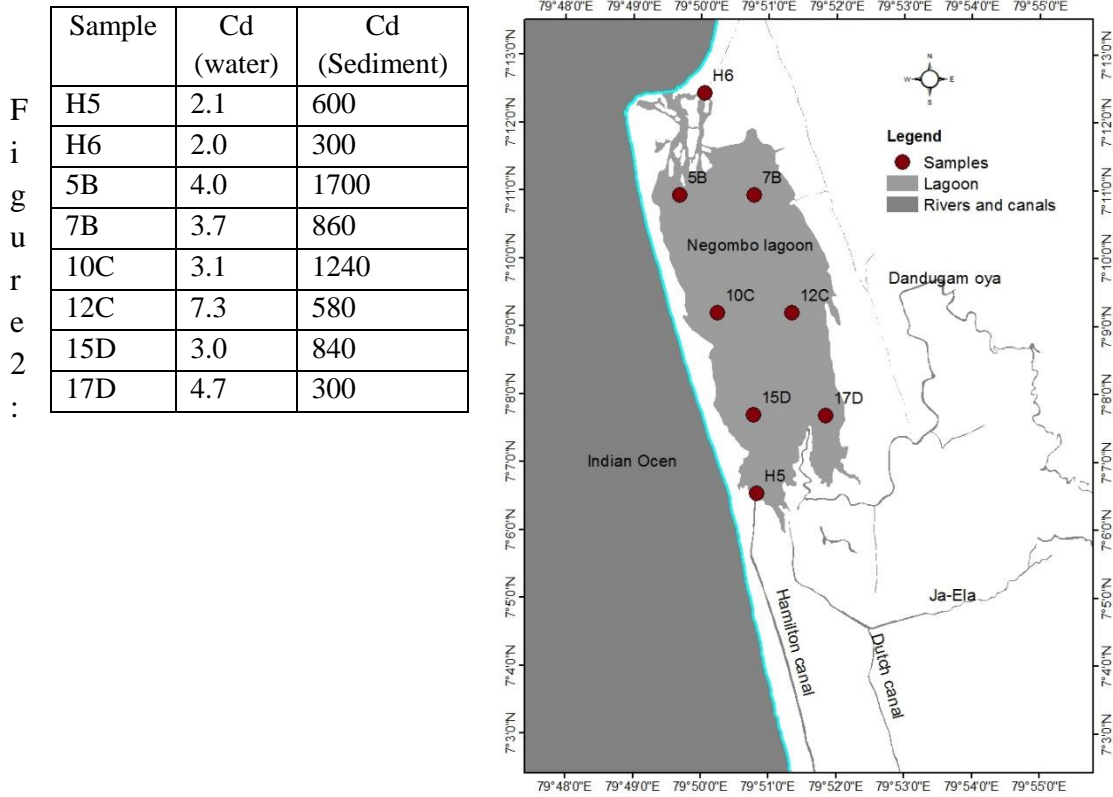
    (04 Marks)

    iii) Explain the suitability of location quotient in assessing the level of spatial concentration of water usages in the industrial and agricultural sectors of a country.
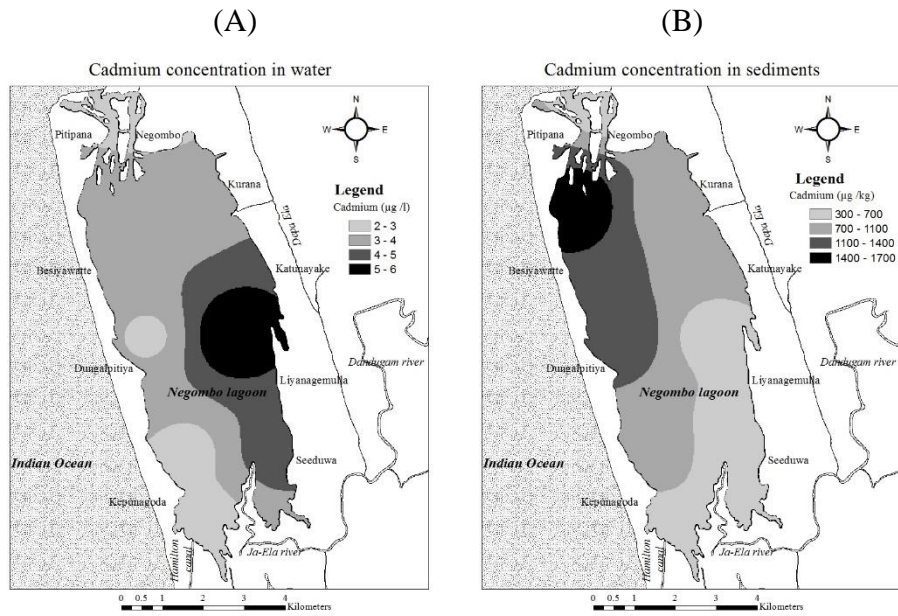
    (04 Marks)

    (Total 20 Marks)

Figure 1: Negombo lagoon and locations of selected water samples

| Sample | Cd (water) | Cd (Sediment) |
|--------|-----------|---------------|
| H5 | 2.1 | 600 |
| H6 | 2.0 | 300 |
| 5B | 4.0 | 1700 |
| 7B | 3.7 | 860 |
| 10C | 3.1 | 1240 |
| 12C | 7.3 | 580 |
| 15D | 3.0 | 840 |
| 17D | 4.7 | 300 |

Figure 2:



Cadmium concentration in water and sediments in Negombo lagoon

(A)                                      (B)

# Part II

02. a) Explain the relationship between observation units and variables using hypothetical data.

(05 Marks)

   b) "Locational analysis reveals the spatial association between geographic variables". Discuss this statement, using appropriate examples.

(15 Marks)

03.a) Explain different methods that help to produce information based on data in locational analysis

(05 Marks)

   b)"Locational analysis helps to transfer complex data into understandable form". Examine this statement critically.

(15 Marks)

# Part III

04

Table-1: Utilization methods of a land in a selected area

| Regions | Total area $(km^2)$ | Urbanized area $(km^2)$ | "A" type housing units | "B" type housing units |
|---------|---------|-----------|-----------|-----------|
| A | 500 | 400 | 80 | 50 |
| B | 1500 | 500 | 65 | 95 |
| C | 1000 | 300 | 100 | 50 |
| D | 750 | 750 | 80 | 20 |
| E | 350 | 300 | 70 | 20 |
| F | 780 | 500 | 60 | 70 |
| G | 1000 | 550 | 30 | 30 |
| H | 800 | 350 | 100 | 15 |
| I | 400 | 200 | 60 | 30 |
| J | 600 | 600 | 50 | 20 |
| K | 350 | 350 | 100 | 30 |
| L | 540 | 540 | 70 | 24 |
| M | 120 | 60 | 110 | 50 |
| N | 150 | 60 | 120 | 50 |
| O | 260 | 20 | 65 | 60 |
| P | 750 | 450 | 130 | 70 |
| Q | 1500 | 200 | 50 | 110 |
| R | 1350 | 300 | 100 | 100 |
| S | 650 | 650 | 110 | 20 |
| T | 1250 | 700 | 350 | 10 |

i) Classify the observation units given in Table 1, using the most appropriate method

(10 Marks)

ii) Prepare a summary table for the results obtained in section 4.i

(05 Marks)

iii) Examine the suitability of the method you have selected in section 4.i using your results.

(05 Marks)

(Total 20 Marks)

05. Prashath is a final year student of the Geography Special Degree programme and he has conducted a field survey on water bird species in 15 wetlands. He used the following specifications for data entering.

- Name of the observation stations: 1,2,3,4,5,6,7,8,9,10,11,12,13,14 and 15
- Types of  water bird species observed: A, B,C ,D E and F
- The type **"A"** birds were observed only at the station numbers: 1,3, 5, 7,9,11,12 and13
- The type **"B"** birds were observed only at the following stations: 3, 5, 7,8,10,11,12 and 14
- The type **"C"** birds were not observed at the following stations:   2, 4,5, 10 and 14
- The type **"D"** birds were observed only at the following stations: 1,2,3, 6, 9,10, 14 and 15
- The type **"E"** birds were observed only at the station number 1,2,3,4, 6,7,8,9, 11,12, 14 and15
- The type **"F"** birds were not observed at the following stations:  1, 5,6,7, 9, 11 and 12

Answer the following questions

i) Prepare a data table using the provided data/information above.

(04 Marks)

ii) Based on the data table prepared above, classify the observation units into suitable number of groups using the most appropriate classification method.

(12 Marks)

iii) Discuss the main characteristics of the classified groups.

(04 Marks)

(Total 20 Marks)

*******