RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

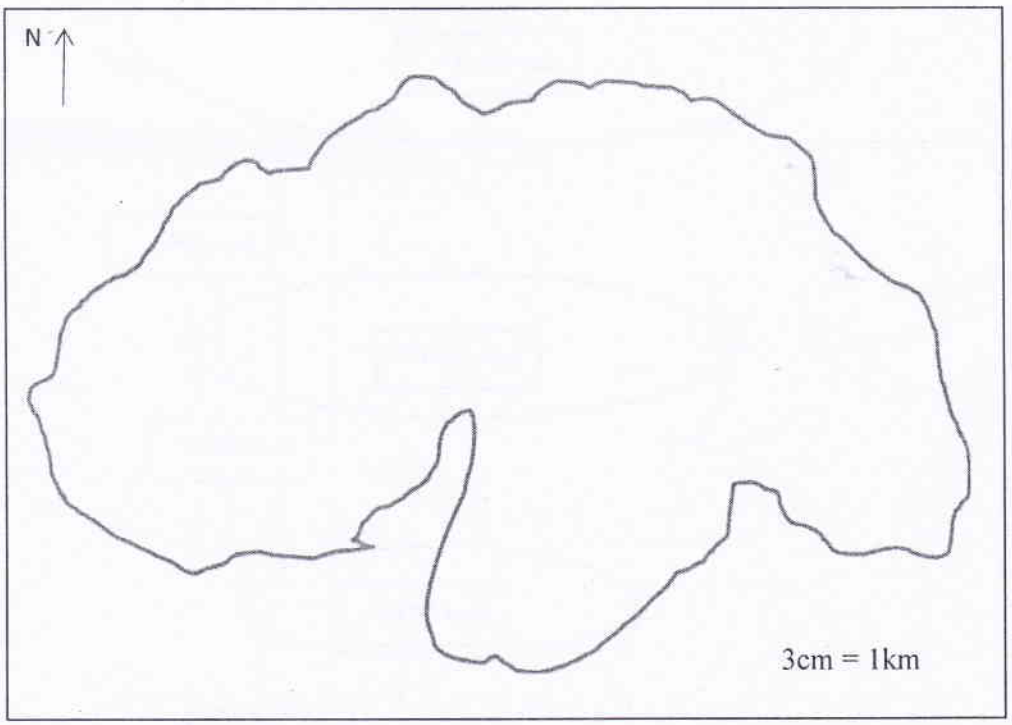
B.Sc. (Special) Degree in Applied Biology
Fourth Year – Semester I Examination – January/ February 2021

BDC 4206 – LIMNOLOGY AND CONSERVATION OF AQUATIC RESOURCES

Time: Two (02) hours

Answer ALL questions.

1. a) The bathymetric map of a man made tank is given below. Using the map, answer the following questions.



i. Estimate the maximum length and width of the tank.

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(10 marks)

ii. Determine the surface area of the tank by grid enumeration method.

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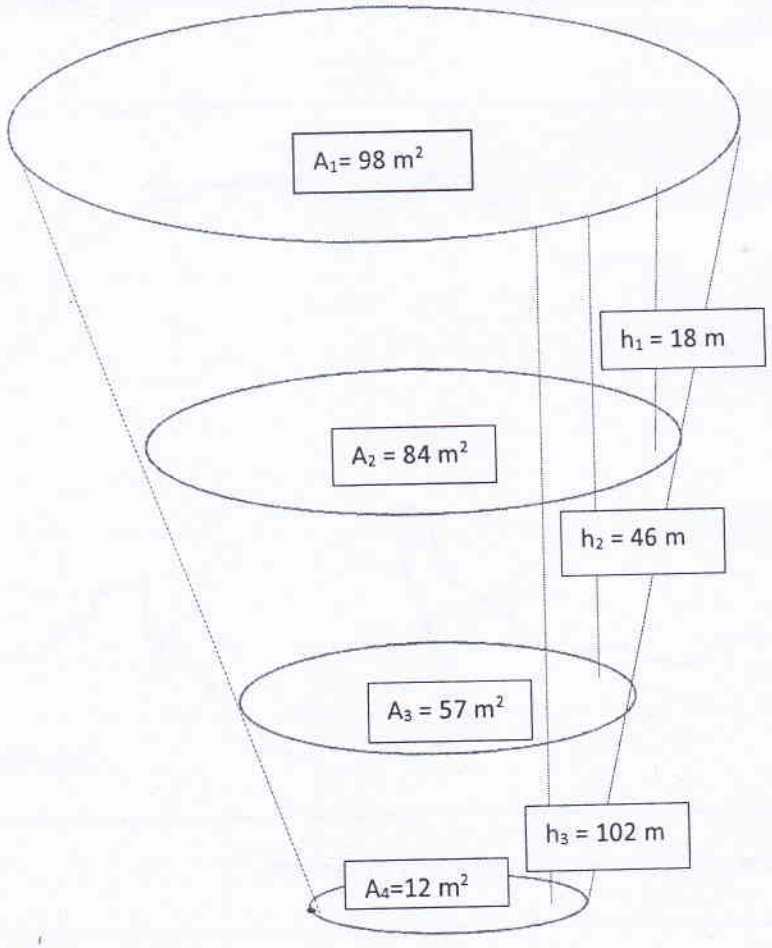
(10 marks)

iii. Calculate the total volume of the tank using the following information.

At first contour: Area is 0.75 km^2 and depth is 0.2 km
At second contour: Area is 0.5 km^2 and depth is 0.4 km
Basal area is 0.3 km^2 and total depth is 1.2 km

(15 marks)

b) The following diagram shows the surface area and height at each contour of a tank. Draw the hypsographic curve for this tank using the graph paper provided.



(20 marks)

c) i. What is meant by the term "drainage basin"?

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(05 marks)

ii. Using a diagram **only**, illustrate how you would order the tributary streams in a drainage network according to the Horton - Strahler method.

(06 marks)

iii. Explain what is "vadose water"

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(05 marks)

iv. Explain the process of single storm precipitation event using the standard hydrograph with an accompanying illustration.

(20 marks)

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v. Define the following terms.

Delta

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Fan

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Broad plane

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(09 marks)

2 a) Classify the lakes based on stratification and circulation patterns and describe each of them **(20 marks)**

b) Write a comparative account on the vertical zonation of lakes emphasizing on the effects of factors affecting. **(80 marks)**

3. Explain the distribution of zooplankton in reservoirs and discuss the reasons for this distribution. **(100 marks)**

4. Discuss the distinctive physical properties of riverine, transitional and lacustrine zones of reservoirs.

(100 marks)

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