UNIVERSITY OF RUHUNA

BACHELOR OF SCIENCE (SPECIAL) DEGREE LEVEL I & II (SEMESTER I)
EXAMINATION – JULY 2017

SUBJECT: BOTANY

COURSE UNIT: FORESTRY AND FOREST MANAGEMENT (BOT 4083)

Time: Two (2) hours   Index Number ....

Answer any **four (4)** questions **including the question number 01**

01.

I. List **four** major goals of 'forestry' according to the **'Helsinki conference in 1992'**.

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II. Name **six** major forest types found in Sri Lanka.

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III. Define the following terms in relation to the height of a standing tree.
   A. Bole height:-

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   B. Standard timber bole height:-

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   C. Crown height:-

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IV. Describe the difference between following terms.

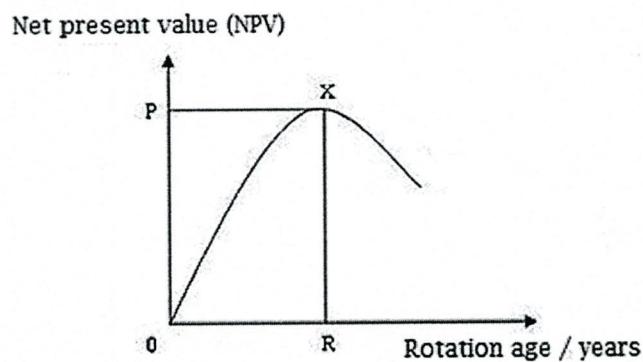   A. 'Net volume' and 'gross volume' of a tree

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    B. 'Active remote sensing' and 'passive remote sensing'

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V. State six areas where we can use remote sensing and GIS in forestry.

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VI. Briefly explain how to use following graph to determine economically optimum rotation age of a forest plantation.

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VII. List four major objectives of silviculture.

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VIII. Name four indirect methods which can be applied in measuring the height of a standing tree.

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2.

I. If you are willing to start a forest cultivation, briefly describe the factors that you should be taken in to account in determining a suitable silvicultural system.

II. List out visual resources of a forest ecosystem by giving suitable example for each.

3.

In preparation of a forest inventory for a *Pinus* plantation with similar age, following mean values were obtained;

       Mean GBH = 44 inches

       Mean of total tree height = 8.50 m

       Mean of merchantable height = 6 m

       Mean tree density = 3100 Trees hec^{-1}

Based on the above data, answer the following questions.

I. Calculate the mean gross timber volume per tree in board feet by assuming that *Pinus* bole is 'parabolic' in shape (1 inch = 0.083 feet, 1 meter = 3.28 feet).

II. Assuming that the coverage of the *Pinus* plantation is 12 hectares, estimate the total timber volume extractable from that *Pinus* plantation.

III. What are the sources of errors in height measurements of a tree?

4.

Briefly discuss **any two** of the followings with special reference to Sri Lanka:

I. Forest management policies including common and relatively new policies

II. Functions and principles of an effective forest policy

III. Direct and indirect drivers of deforestation and forest degradation

5.

I. Compare clear felling silvicultural system with shelterwood silvicultural system.

II. Briefly explain the protective actions that can be practiced against forest fires.

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