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Mihintale

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

**B.Sc. (General) Degree in Applied Sciences
Second Year – Semester II Examination – April /May 2015**

BIO 2207 – ECONOMIC BOTANY

Time: Two (02) hours

Answer any four (04) questions.

1. The first clothes were probably made of animal skins, and then at some point people learned to weave plant fibers into textiles. Now discoveries at a cave in the Republic of Georgia, suggest that this skill was acquired more than 30,000 years ago.
 - a) Describe what 'plant fibres' are. (20 Marks)
 - b) Fibres can be grouped based on the **type and from what part of plant it is derived** or according to the **commercial use**. List the categories of fibres under these two classifications, indicating one example for each category. (30 Marks)
 - c) Name five native non-textile fibre plants in Sri Lanka. Indicate the family of each. (15 Marks)
 - d) Discuss the contribution of family Malvaceae (including Bombacaceae, Sterculiaceae and Tiliaceae) in the world plant fibre industry. (35 Marks)
2. Known as the 'Spice Island', Sri Lanka was historically attractive to the Western nations for its spice riches. Sri Lanka is famous for a range of favourite spices. Fifty six percent of Sri Lankan agricultural exports consist of spices, allied products and essential oils.
 - a) Explain why we use spices. (10 Marks)
 - b) Giving named examples in each case, emphasize the use of different plant parts (either directly or processed) as spices in Sri Lanka. (30 Marks)
 - c) List five spices used in tea industry; and list three differences between brewed 'black tea' and brewed 'green tea'. (20 Marks)
 - d) Briefly describe the characteristic features of essential oils. (15 Marks)
 - e) Some spice plants are also important as original sources of essential oils. Justify briefly. (25 Marks)

3. Sri Lanka's sugar producing sector has now been reduced to a crises-ridden industry owing to neglect and absence of a coherent government policy covering the interest of all the stakeholders, growers of sugarcane and the consumers.
- a) List four sugar storage plant parts, stating at least two examples for each of them. Give generic name and family of examples. (20 Marks)
 - b) Schematically illustrate the 'cane-sugar production process' and state the importance of its bi-products. (25 Marks)
 - c) Write a short article on 'The feasibility of underutilized palm sugar sources in Sri Lanka to satisfy the prevailing sugar demand and to mitigate the present crisis in the sugar industry' to publish in a Sunday news paper to educate and convince the public and relevant authorities. (35 Marks)
 - d) Briefly describe how you would design a special chewing-gum using only plant sources for the people with 'chew-gum-habit/addiction', as a remedy to minimize cancer and diabetes risks of them in future. (20 marks)
4. **'Pathogens and their products cause immense economic losses in agricultural practice as contaminated food products are not appealing for consumption. One of the myriad of measures devised to control this is the use of botanicals as biocontrol agents'**. Using examples discuss the potential of botanicals in biocontrol. (100 Marks)
5. Explain the following statements.
- a) Eradication shouldn't always be the goal of any pest control program. (25 Marks)
 - b) Neem seed oil is not useful in IMP, but Azadiractin is. (25 Marks)
 - c) Genetic engineering of plants is useful for enhancing biocontrol. (25 Marks)
 - d) Synthetic pyrethroids are preferred over pyrethrum. (25 Marks)
