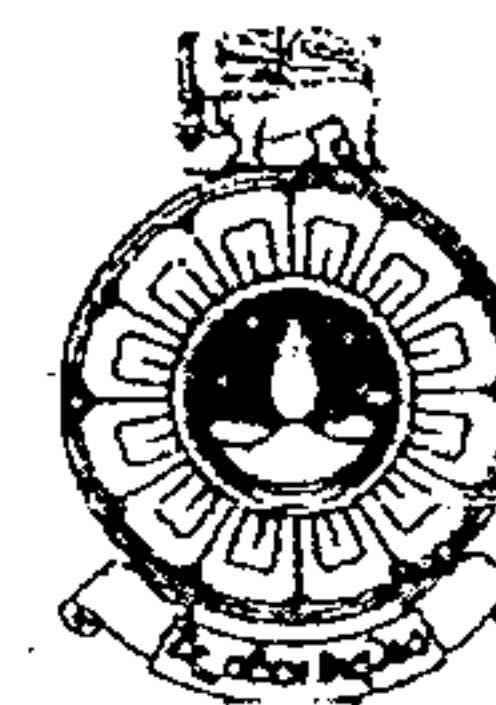


The Open University of Sri Lanka  
 B.Sc Degree Programme – Level 05  
 CSU 5305 – Theory of Computing  
 Department of Computer Science  
 No Book Test -1 (NBT – 1) 2019/2020  
 Duration: One Hour only




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Date: 01.04.2020

Time: 4.15pm-5.15pm

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**Answer All Questions.**

- (1) (i) Define the words : “**Alphabet** ” , “**String**” and a “**Language**” .
- (ii) Is your first name a String? Justify your answer.
- (iii) What is meant by a substring of a string?
- (iv) Using your answer to part (iii) write down the sets of substrings of the string **bbrdwark** over the alphabet **{a ,..., z}** .
- (v) If L is any language write the Kleene closure of L. what is  $L^+$  ?
- (vi) What is a **Regular Expression**?
- (vii) If S and T are two sets of strings, define the concatenation of the two sets of strings in set notation.
- (2) Write the corresponding Regular Languages for the Regular Expressions given below.
- (i)  $(a + bc)$
- (ii)  $a(b + c)$
- (iii)  $a^* b^*$
- (iv)  $(ab)^*$
- (v)  $a^* (b+c)$

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