MTech in Data Science
IIT Palakkad
DS5003A : Data Engineering
Test 1 (6 Sep 2024)

Marks : 10

0800-0850

1. Write an algorithm to find the *longest* path between any two nodes in a graph.

2. Suppose we want to build communities based on students' interests. Students interests are collected through a survey on three topics: (i) science, (ii) sports, and (iii) food. Some students may not provide answer to all the topics. Write an algorithm to form the communities where students inside a community are more coherent in terms of their interests compared to students across communities. While forming the communities interests across all topics should be considered, there should not be communities on the individual topics. A student can not be present in more than one community and every student should be part of some community.

3. Derive time complexity using Big O notation for one of the above two questions.