Five sequences are given as follows:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S1** | A | C | G | C | G | T | T | G | G | G | C | G | A | T | G | G | C | A | A | C |
| **S2** | A | C | G | C | G | T | T | G | G | G | C | G | A | C | G | G | T | A | A | T |
| **S3** | A | C | G | C | A | T | T | G | A | A | T | G | A | T | G | A | T | A | A | T |
| **S4** | A | C | G | C | A | T | T | G | A | A | T | G | A | T | G | A | T | A | A | T |
| **S5** | A | C | A | C | A | T | T | G | A | G | T | G | A | T | A | A | T | A | A | T |

Implement UPMGA algorithm and construct the phylogenetic tree.

Submit Java or Python source code file with the name like roll.pdf  <55.java> or <55.py>