Shahjalal University of Science and Technology
Institute of Information and Communication Technology
3rd year 1st Semester
Semester Final Exam (Session 2017-18)
SWE325: Distributed System

Group A

1   Demonstrate the application of Distributed System in Web.   5

2   Why the Election process is required in Distributed systems?   6
A group of 5 processes (P0..P4) uses the bully algorithm to pick a leader with the highest numbered process ID. Process 1 detects the death of process 4. Explain the new election process using bully algorithm.

3   A user arrives at a railway station that they has never visited before, carrying a   4
PDA that is capable of wireless networking. Suggest how the user could be provided with information about the local services and amenities at that station, without entering the station's name or attributes. What technical challenges must be overcome?

Group B

4   Suppose you are designing a ticketing system where slot is assigned to the used   5
based on first come first serve way. How can you implenet this system in a relaible way that it ensures the validity and integirty of the assignment? State a model for your soloution with digram view.

5   What are the communication paradigms for Distributed System?   6
Suppose you are designing a stock market application where user can get update about price of their preferred stock category or any particular stock. You need a system for this real time notification. Design the communication process for this system and explain with diagram.

   4

6   Write an algorithm in pseudo-code to describe the serialization procedure as Java object serialization. The algorithm should show when handles are defined or substituted for classes and instances. Describe the serialized form that your algorithm would produce when serializing an instance of the following class, Couple:

```
class Couple implements Serializable{
        private Person one;
        private Person two;
                public Couple(Person a, Person b) {

                one = a;
                two = b;
        }
}
```