



# **Ahsanullah University of Science & Technology**

## **Department of Computer Science & Engineering**

**Subject: Database System (CSE 3103)**

**Semester: FALL 2020**

**Quiz: 04**

**Marks: 20**

### **Instructions:**

- i. You need to submit this QUIZ as handwritten document. You need to write in formal A4 paper one sided for the answers. Maintain 1.0" inch margin in the left and 1.5" inch margin on the top of the page.
- ii. **IMPORTANT:** A Top Sheet Need to Make with Mentioning **Name, ID, Couse No, Course Name, Semester -FALL 2020, Date and Signature**. In every page need to have the page number in below. **ID and Signature** need to enclose in the top margin in each of the paper. If you forgot to write in some page that page will not be evaluated.
- iii. After completion of the task, you need to scan the whole document. Use CamScanner App from mobile, or if you have scanner at home you can use that too and Upload in PDF format. For capturing picture try to capture with decent light, do not use flash light for capture image/scan. You need to rename your script in ID\_Q2\_FL2020 (**Example : 180104001\_Q4\_FL2020**) before uploading the PDF.

1. Assume a tree where each node can contain **three (03) pointers**. The values you need to enter will be the alphabets of your own name. You have to take your **Middle Name** and **Last Name** for the alphabets (if you have only two (02) parts then take the **First Name** and **Last Name**, remember *md./ms./sree. etc. shall not been taken as religious view point as we cannot emit any letter from religion title*). Emit the duplicate letters. And prepare your string, then draw the B+ tree. **10**

#### **Example:**

My Name is Nazmus Sakib Rupol, here middle part is **SAKIB** and last part is **RUPOL**. So string will be  
**"S A K I B R U P O L"**

If My Name is Nazmus Sakib, then first name **NAZMUS** and last name **SAKIB**, then the string will be  
**"N A Z M U S K I B"**

Here S and A are omitted from **Sakib** as S & A already in the first part.

#### **How to Answer:**

1. Insert the values step by step, don't sort the key before start drawing.
2. Draw the tree step by step, the first step will be inserting "S" then "A" then going on.
3. Follow the rules of insertion where

LEFT < Variable  
RIGHT >= Variable

**IMPORTANT:** You can follow the attached answer script sample for answering this question.

3. Consider the following B+ tree where branching factor m is Three(03). Perform the following operation separately and show the tree.

10

- a. Insert : G , S , Q
- b. Delete: M , K , O

