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**University of Management and Technology**

**School of Systems and Technology, Department of Computer Science**

**Assignment 02– FALL 2023**

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| Course Title: | Programming Fundamentals | | | | Course Code: | | CC1021 | Credit Hours: | | 4(3,1) |
| Course Instructor: | **Muhammad Owais Khan** | | | | Program Name: | | BSCS | | | |
| Semester: | 1st | Batch: | FA23-BCS | Section: |  | | Date: | | 01-12-2023 | |
| Due Date: | **03-12-2023, Sunday** | | | | Maximum Marks: | | | | **25** | |
| Student’s Name: |  | | | | Reg. No. |  | | | | |
| **Important Instructions (To be followed very strictly)**   * This is an individual assignment * Attempt all questions * Assignment must be handwritten you have to upload pdf on LMS before deadline. * The assignment must include all steps involved to solve given questions * No submission is allowed after the aforementioned deadline. | | | | | | | | | | |
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**Question No 1. [CLO-2] <Bloom Taxonomy – C3: Apply> Marks [5 x 5=25]**

**Apply basic programming concepts to real-world scenarios on Conditional statements and solve the following problems.**

Consider the following real-world scenarios and write down the following of each statement:

1. Purpose of the Program
2. Input-Processing-Output
3. C++ Program
4. Dry Run

**Problem 1:**

Develop a program that takes values of the length and breadth of a rectangle from a user and checks if it is square or not.

**Problem 2:**

An organization decided to give a bonus of 5% to the employee if his/her year of service is more than 5 years. Ask an employee for their salary and year of service and print the net bonus amount and calculate incremented salary.

**Problem 3:**

A university has the following rules for the grading system:

* Below 25 – F
* 25 to 45 – E
* 45 to 50 – D
* 50 to 60 – C
* 60 to 80 – B
* Above 80 – A

Ask the user to enter marks and print the corresponding grade.

**Problem 4:**

A student will not be allowed to sit in an exam if his/her attendance is less than 75%. Take the following input from the user:

* Number of classes held
* Number of classes attended.
* And print the following:
* percentage of classes attended
* and decide: Is the student is allowed to sit in the exam or not.

**Problem 5:**

Develop a program that modifies the above question (**Problem 4**) to allow the student to sit if he/she has a medical cause. Ask the user if he/she has a medical cause or not ('Y' or 'N') and print accordingly.