National University

of Computer and Emerging Sciences Chiniot -Faisalabad Campus

EE1005 – Digital Logic Design
Quiz# 4

Instructor: Muhammad Adeel Tahir **Section:** SE-2B **Time:** 20 Minutes

Name: _____

Roll No: _____ **Total: 15 marks**

Note: *Use the back side of the page if needed. Make sure the handwriting is neat and clean, quiz will be marked as 0 if attempted in a writing that is not readable at all.*

Q: An **M-bit** thermometer code for the number **k** consists of (**k) 1's** in the least significant bit positions and **(M – k) 0's** in more significant bit positions. A binary-to-thermometer code converter has **N inputs** and $\mathbf{2^N - 1}$ **outputs**. It produces a $2^N - 1$ bit thermometer code for the number specified by the input. Design a combinational circuit for binary-to-thermometer code converter provided the number of inputs = 3 by finding the following. **Also draw circuit diagram. (5 marks)** Note: Incase the truth table/equations are not correct, the question will receive 0 mark

No of Inputs: ____ No of Outputs: _____ **(1 marks)**

Truth Table: **(5 marks)**

Use $A_0, A_1, A_3 .. for\ the\ inputs, and\ T_0, T_1 \ldots T_n\ for\ the\ outputs$

Equations: **(1.75 each = 4 marks)**