**National University of Computer & Emerging Sciences, Karachi  
Fall-2022 CS-Department****Assignment 4**

**Deadline 30 May 2022 11:55 pm**

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| **Course Code: CS3005** | **Course Name: Theory of Automata** |

**Turing Machines**

1. **Create Turing Machines for the following language:** 
   1. **L1 = {0n1m0n1m |n,m≥1}.**
   2. **L2 ={a3nbnc2n|n≥2}.**
   3. **L2 ={an+mbncm|n≥0}.**
   4. **L3** = {**0n** | n is a power of 2}
2. **Create Turing Machines for the following function:** 

   2. **else write "equal" on the tape if x = y.**
   3. 4^3.