**UNITED INTERNATIONAL UNIVERSITY**

Department of Computer Science and Engineering (CSE)

**Course Title: Theory of Computation Trimester & Year: Fall 2023**

**Course Code: CSE 2233 Section: F, G**

CT-03

**Credit Hours: 3.0**

**MdMH**

Total Marks: **10** Time: **30 min**

1. i) Write the **CFG** that generates the following language:  **3**

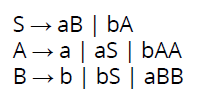
L (G) = { an b2m | n ≥ 1, m ≥ n}

ii) Construct a **CFG** that generates the following language : **3**

L (G) = { an bm | n ≤ m ≤ 2n}

1. Consider the following production rules of a CFG**-**

**2+2**



Using i) **Leftmost Derivation** and ii) **Parse Tree**, show that the following string can be generated using the above grammar: **aabbabba**