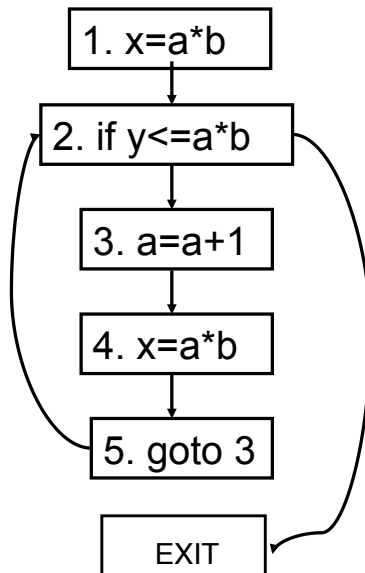YOUR NAME: __Bishwajit Saha__

# Program Analysis Quiz 1

Friday February 5, 2021

20 points

All 10 questions refer to the following control-flow graph:



**Question 1.** (2pts) Definition $(a, 3)$ reaches entry of node 4.

➤ (a) true
   (b) false

**Question 2.** (2pts) Definition $(a, 3)$ reaches entry of node 3.

➤ (a) true
   (b) false

**Question 3.** (2pts) The set of definitions that reach the entry of node 5 is the following: $(x, 1), (a, 3)$, and $(x, 4)$.

   (a) true
➤ (b) false

**Question 4.** (2pts) Variable $a$ is live on exit from 2.

➤ (a) true
   (b) false

**Question 5.** (2pts) Variable $x$ is live on exit from 4.

   (a) true
➤ (b) false

**Question 6.** (2pts) Expression $a * b$ is available at entry of node 2.

➤ (a) true
   (b) false

**Question 7.** (2pts) No expression is available at entry of node 5.

   (a) true
➤ (b) false

**Question 8.** (2pts) Expression $a + 1$ is available on exit from node 3.

   (a) true
➤ (b) false

**Question 9.** (2pts) Expression $a * b$ is very busy on exit from node 1.

   (a) true
➤ (b) false

**Question 10.** (2pts) Expression $a + 1$ is very busy on entry from node 3.

   (a) true
➤ (b) false