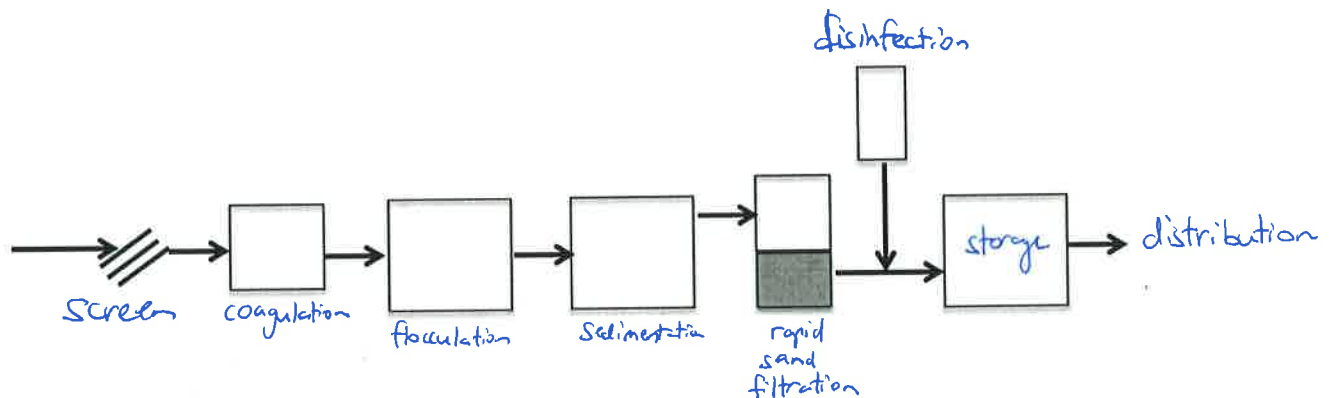


Quiz 3—Water Treatment Processes
CENG 340—Introduction to Environmental Engineering
Instructor: Deborah Sills
18 October, 2013

Name: **KEY**

1. (6 points) Add labels to the following schematic of a drinking water treatment plant designed to treat surface water. Labels should describe (in one or two words) the appropriate unit process.



2. Multiple Choice: one or more answers may be correct in each of the following questions.

(a) (2 points) The coagulation process

- i. removes particles from water $+1/3$
- ☒ ii. neutralizes charged particles in water $+1/3$
- iii. filters particles in water $+1/3$
- iv. precipitates particles in water $+1/3$
- v. requires slow mixing $+1/3$
- ☒ vi. requires rapid mixing $+1/3$

(b) (2 points) Alum addition results in a reaction that

- ☒ i. consumes alkalinity $+1/2$
- ii. produces alkalinity $+1/2$
- ☒ iii. may require addition of alkalinity $+1/2$
- iv. operates best at pH between 7.7 to 9.9 $+1/2$