

CHEMISTRY ASSIGNMENT

THEORY QUESTIONS

1. (a) Explain what is meant by temporary hardness and permanent hardness of water.

(b) Describe three methods for removing temporary hardness.

(c) Describe two methods for removing permanent hardness.

2. (a) List three effects of hard water in the

home and three in industries.

(b) Explain why hard water is sometimes preferred for drinking.

(c) With equations, show how boiling removes temporary hardness.

3. (a) Describe the ion-exchange (Permutit) process of softening hard water.

(b) State the major advantage and disadvantage of this method.

(c) Why must the ion-exchange

resin be regenerated periodically?

4. (a) Explain with equations how adding washing soda (Na_2CO_3) removes permanent hardness.

(b) State two limitations of this method.

(c) List two industrial processes that require soft water.

5. (a) What is scum, and how is it formed?

(b) Describe an experiment to compare the hardness of two

water samples.

