Sohag University

Faculty of Engineering

Civil Engineering Department

Third Year Civil

Introduction to Environmental Eng.

Sheet No. 1

1- Define: (a) Environmental engineering and (b) Water supply engineering?

2- List six area for which environmental engineering are responsible?

3-Draw a simple sketch to show the Hydrologic Cycle?

4- Illustrate the essential characteristics of drinking water?

5- The numbers of population between 1940 to 2010 for a city are shown in the table. Estimate the predicted population number in 2060 by geometric increase, arithmetic increase, decreasing rate of increase, and graphical extension methods. Consider the population saturation limit is 43000, and the decreasing rate 0.9%?

Year	1940	1950	1960	1970	1980	1990	2000	2010
Population	10000	12000	13200	14600	16200	18000	19000	22000

6- A city has a population of 240000 capita, and the current water consumption per capita is 200 liter/day. If the population increases with 1.3% each year, and the water consumption increases and decreases by same percent (20%) in summer and winter, respectively, comparing to the annual average consumption. Calculate the daily average consumption in summer and winter after 40 years in m^3/day?

7- IF a faucet is dripping at a rate of one drop per second, and each drop contains 0.15 millimeters, calculate how much water (in liters) can be lost per two years?

8- Sohag University has installed standard pressure operated flush valves on their water closets. When flushing, these valves deliver 130.0 liter/min. If the deliver water costs 0.25 Egyptian pound per cubic meter. What is the monthly cost of non-repairing a broken valve which flushing continuously?

9- Find the number of population in the city with different residential density as shown in the following table:

Area (km^2)	30	40	50
Density (per m^2)	10	5	20