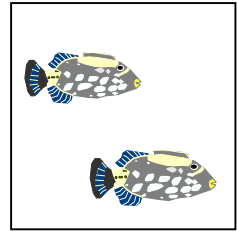


Environmental Engineering



Tutorial 1a Water Supply Treatment

Answer any Two questions from Section A and One from Section B.

Section A

1.	a	With the help of annotated diagram, briefly outline the hydrological cycle of water.
	b	What are the sources of water in Hong Kong ?
	c	Briefly describe the quality of water in Hong Kong ?
2.	a	State the objectives of water supply treatments.
	b	Draw a flow diagram showing the various water supply treatment processes.
3.		State the objectives (purposes) of each of the following treatment. i) screening ii) coagulation iii) sedimentation iv) filtration v) disinfection vi) adding lime to water vii) prechlorination
4.	a	Describe the principle and the process of coagulation.
5.	a	Describe the principle of filtration.
	b	Describe the principle of sedimentation.
6.	a	List the types of sedimentation tank.
	b	List the types of filter.
7.	a	Discuss the advantages and disadvantages of chlorination.
	b	What is breakpoint chlorination ?
8.	a	Discuss the effects of hardness in water.
	b	What are temporary and permanent hardness and explain how they can be removed from water.
9.		Write short notes on the following terms : i) Polyelectrolytes ii) Backwashing of filter iii) residual chlorine

Section B

1		Critical review the current water supply system in Hong Kong.
2		Suggest ways to improve the water supply system in Hong Kong. Your recommendation should include comment on the cost.