

[01 - 3114]

III/IV B.E. DEGREE EXAMINATION.

First Semester

Civil Engineering

ENVIRONMENTAL ENGINEERING — I

(Common with Civil Environmental Engineering)

(Effective from the admitted batch of 2006–2007)

Time : Three hours

Maximum : 70 marks

First question is compulsory.

It is to be answered in same sequence at one place.

Answer any FOUR from the remaining.

ALL questions carry equal marks.

1. (a) What is safe water? How is water rendered safe?
- (b) Distinguish between a lake and a reservoir.
- (c) Give the drinking water quality standard for fluoride and write its significance. 0.2 - 0.3 mg/l
- (d) How is colour imparted to water?

- (e) Define break point chlorination.
- (f) Mention the purpose of a balancing reservoir.
- (g) How does water act as a vehicle of disease transmission?

- 2.
- (a) Explain the importance and necessity of protected water supply systems.
 - (b) The population data for a certain town is given below. Find out the population in the year 1970 and 1980 by arithmetical and geometrical increase methods.

Year:	1920	1930	1940	1950	1960
Population:	75,000	1,10,000	1,50,000	2,00,000	2,42,000

- 3. (a) Derive expressions for determining yields from wells penetrating unconfirmed and confirmed aquifers.
 - (b) What is an intake structure? What are the factors governing the selection of intake structure?
- 4. What is hardness of water? Distinguish between temporary and permanent hardness. Explain EDTA method of analysis by titrimetry.
 - 5. Give the flow chart of a water treatment plant and explain the treatment methods.

6. (a) Explain the purpose of pumping in a distribution system.
- (b) Write about distribution networks analysis.
7. What are the advantages and disadvantages of slow sand filters? With a neat sketch, explain briefly the working of rapid sand filter.
8. Write short notes on any THREE :
- (a) Ground water quality vs. surface water quality
- (b) Aeration
- (c) Hydrological cycle
- (d) Protection of water storage in overhead tanks.