

**B. TECH. (CIVIL ENGINEERING)
BTCLEVI**

Term-End Examination

December, 2013

BICE-014 : ENVIRONMENTAL ENGINEERING-I

Time : 3 hours

Maximum Marks : 70

Note : Answer any five questions. Question No.1 is compulsory. Assume missing data if any.

1. (a) Differentiate the quality of water from surface and sub surface sources. 7x2=14
- (b) What is fire demand ? How is it calculated ?
- (c) What are the different types of pumps used in water conveyance system ?
- (d) Differentiate between BOD and COD.
- (e) Differentiate between Suspended solids and Dissolved solids.
- (f) Differentiate between coagulation and disinfection.
- (g) List out the advanced methods (techniques) of water treatment.

2. (a) Draw a typical graph showing fluctuations in rate of consumption of water and state its significance. 7
- (b) Define the term yield and specific Capacity of wells ? How yield of a shallow well is determined ? 7
3. (a) What is an Intake ? How will you decide the location of an Intake ? Describe Hydrotest for a newly constructed water line ? 7
- (b) Enumerate the common impurities affecting the quality of water ? Describe their adverse effects on human body. 7
4. (a) State theory of sedimentation and mechanism of coagulation and flock formation ? 7
- (b) Draw typical sketch of a Chlorinator. How will you determine Chlorine demand of given source of water ? 7
5. (a) Prepare a brief note on collection of water sample for bacteriological examination of water. What standards are generally followed for assuming the water bacteriologically safe ? 7
- (b) State the design criteria of slow and rapid gravity filters. 7

6. (a) What are the various layouts of distribution network in water supply system stating their individual merits and demerits ? 7
- (b) How will you estimate future population with the help of incremental increase method ? Explain with the help of a suitable example. 7
7. (a) What are the various chemicals used for coagulation ? Discuss their merits and demerits . 7
- (b) Explain the various pipe materials and pipe fittings used in water supply system. Give it's applications/suitability. 7
8. Write short notes on : 4x3.5=14
- (a) Drinking water quality standards
- (b) Determination of Reservoir capacity
- (c) Removal of tastes and odour
- (d) Pressure filter
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