

DIPLOMA IN CIVIL ENGINEERING
DCLE(G) / DCLEVI

Term-End Examination

00810

June, 2016

BCE-033 : ENVIRONMENTAL ENGINEERING

Time : 2 hours

Maximum Marks : 70

Note : Attempt **five** questions in all. Question no. 1 is **compulsory**. All questions carry equal marks. Use of scientific calculator is allowed. Assume missing data if any.

1. Choose the correct answer from the following : $7 \times 2 = 14$
- (a) The unit of turbidity is
- (i) MTU
 - (ii) KTU
 - (iii) NTU
 - (iv) LTU
- (b) Which source of water, among the following, is **not** a surface source ?
- (i) River
 - (ii) Well
 - (iii) Lake
 - (iv) Ocean

- (c) Water storage improves water quality.
- (i) True
 - (ii) False
- (d) Slow sand filters are not suitable for places where cost of land is high.
- (i) True
 - (ii) False
- (e) Fish in the water will be killed, if D.O. is
- (i) < 4 ppm
 - (ii) > 4 ppm
 - (iii) < 2 ppm
 - (iv) > 2 ppm
- (f) The gas which is generally present in sewer is
- (i) H_2S
 - (ii) CO_2
 - (iii) CH_4
 - (iv) O_2
- (g) Grit Chamber removes
- (i) Organic matter
 - (ii) Inorganic matter
 - (iii) Both (i) and (ii)
 - (iv) None of these

2. (a) Enlist the underground water sources and explain any two. 7
- (b) Write the important considerations for selection of sources of water for a city. 7
3. (a) Explain domestic water demand. Give a distribution chart for domestic water demand. 7
- (b) Give a flow diagram of water treatment plant. 7
4. Draw a neat sketch of a slow sand filter and describe how it works. 14
5. (a) Write a note on waste water reuse. 7
- (b) Explain the following : 7
- (i) Self cleansing velocity
- (ii) Limiting velocity
6. (a) What do you understand by trickling filters ? Discuss its working with a flow diagram. 7
- (b) What is sludge thickening ? Explain any one method. 7

7. Write short notes on any *four* of the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Turbidity
 - (b) Hardness of water
 - (c) Centrifugal pumps
 - (d) Grab and composite sampling
 - (e) Corrosion in pipes
 - (f) Grid-Iron system
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