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No. of Printed Pages : 4

BCE-033

DIPLOMA IN CIVIL ENGINEERING

(DCLE)

Term-End Examination

June, 2019

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.*

1. Choose the correct alternative : 7×2=14

   (a) Recommended water supply levels, for town provided with piped water supply but without sewerage system, is :

   (i) 70 lpcd

   (ii) 135 lpcd

   (iii) 150 lpcd

   (iv) 200 lpcd

(b) Cholera is a :

(i) Viral disease

(ii) Bacterial disease

(iii) Protozoal disease

(iv) None of the above

(c) Which of the following causes a decrease in per capita consumption of water ?

(i) hotter climate

(ii) good quality water

(iii) use of metering system

(iv) better standard of living of the people

(d) It is the measurement of the ability of a solution to carry electrical currents :

(i) Acidity

(ii) Alkalinity

(iii) Turbidity

(iv) Conductivity

(e) The velocity of flow of water in sedimentation tank should not be greater than :

(i) 30 cm/min

(ii) 40 cm/min

(iii) 50 cm/min

(iv) 60 cm/min

(f) The means of access for instruction and cleaning of sewer line is known as :

(i) Inlet

(ii) Manhole

(iii) Catch Basin

(iv) None of the above

(g) A pipe which is installed in the house drainage to preserve the water seal of trap is called :

(i) Vent pipe

(ii) Waste pipe

(iii) Antisiphonage pipe

(iv) Soil pipe

2. (a) Describe the factors affecting the per capita water demand. 7

(b) Discuss commonly used surface and ground-water sources. 7

3. (a) Explain the physical characteristics of water. 7

(b) Describe the methods to estimate the microbiological quality of water. 7

4. (a) Discuss the biological treatment of waste water. 7

(b) What do you mean by Sedimentation ? Explain the common design criteria for sedimentation tank. 7

5. (a) Describe the layout of Distribution pipe system. 7

(b) Explain the hydraulic Ram with the help of a neat sketch. 7

6. (a) Discuss the impacts of in adequate management of waste water and storm water. 7

(b) Explain the various options of waste water disposal. 7

7. (a) Describe the basic components of sanitary sewer system. 7

(b) Explain various floation methods in brief. 7

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

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

(a) Biochemical Oxygen Demand

(b) Collection of water sample

(c) Ion Exchange Process

(d) Drop manhole

(e) F/M Ratio