Roll No .....

CE - 603

B.E. VI Semester

Examination, June 2014

Environmental Engineering - I

Time : Three Hours

 Maximum Marks : 70

Note: i) Total No. of questions 10.
ii) Attempt one question from each unit.

Unit - I

1. a) What are confined and unconfined aquifers? Explain with the help of neat sketch. Derive an equation for determining the discharge from a confined aquifer. 10

   b) What do you understand by fire demand? 4

OR

2. a) Discuss different methods of forecast of population. Apply an appropriate method, give reasons and predict population of a town for the year 2051 from the following census figures. 10

Year	:	1971	1981	1991	2001
Population	:	80,000	96,000	1,22,000	1,35,000

   b) What are the various factors that affect the average per capita water consumption. 4

Unit - II

3. a) Describe in brief various important test conducted for chemical examination of water. Also give their permissible limit. 7

   b) Describe the agar plate count test. 7

OR

4. a) For water supply of a town, water is pumped from a river 3km away into a reservoir. The max difference of levels of water in river and the reservoir is 20m. The population of the town is 50,000 and per capita water demand is 120 liter per day. If the pumps are to operate for a total of 8 hours and the efficiency of pumps is 80% determine the horse power of the pumps. Assume friction factor as 0.03 the velocity of flow as 2m/s and max. daily demand as 1.5 times the average daily demand. 10

   b) Describe measures that are commonly adopted to minimize pipe corrosion. 4

Unit - III

5. a) What do you understand by plain sedimentation? Describe the design principles of a settling tank. 7

   b) Enumerate various methods for disinfection. Explain ozonation method in detail. 7

OR

6. a) Explain various filter troubles. How are they avoided or solved? 7

   b) Write short notes on following 7

      i) Tube settler

      ii) Aeration treatment

Unit - IV

7. a) A pipe line 0.8m diameter is 2km long. To increase the discharge another pipe line of the same diameter is introduced parallel to the first in the second half of its length. Find the increase in discharge taking Darcy Weisbach friction factor as 0.04 and heat at the inlet as 50m. 7

   b) Write a detailed note on "maintenance of distribution system". 7

OR

8. a) Discuss the methods to determine the capacity of service reservoir? Discuss in brief any one method. 7

   b) Explain briefly the procedure followed in laying and testing the water supply mains. 7

Unit - V

9. a) What precaution should be taken to prevent pollution of water sources? 7

   b) Write the advantages of water carriage system over conservancy system. 7

OR

10. a) What do you understand by plumbing operations? Discuss in detail. 7

    b) Discuss various factors should be considered for preparation of the water supply project. 7

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Unit - II

3. a) What do you understand by traceability in the context of software requirement specification? How is traceability achieved? Why is traceability important considered an important issue?

   b) What are the different types of requirements gathering activities that the analysis use to gather requirements from a customer?

OR

4. a) How are the abstraction and decomposition principles used in developing a good Software Requirements Specification. (SRS)

   b) Discuss a brief overview on object oriented software development.

Unit - III

5. a) What do you mean by terms cohesion and coupling in the context of software design? How are these concepts useful in arriving at a good design of a system?

   b) Do you agree with the following assertion? "A design solution that is difficult to understand would lead to increased development and maintenance cost". Give reasonings for your answer.

OR

6. Write a short notes on : (any four)

   i) User interface design

   ii) Design metrics

   iii) Software modeling

   iv) UML

   v) Function-oriented design

Unit - IV

7. a) Supposed a developed software has successfully passed all the three level of testing i.e., unit testing, integration testing and system testing,can we claim that the software is defect free? Justify your answer.

   b) Write the difference between black-box testing and white-box testing.

OR

8. a) What do you understand by system testing? What are the different kinds of system testing that are usually performed on large software products?

   b) Do you agree with the following statement. "System testing can be considered a pure black-box test"? Justify your answer.

Unit - V

9. a) What are the different types of maintenance that a software product might need? Why are these maintenance required?

   b) What do you mean by the term software reverse engineering? Why is it required? Explain the different activities undertaken during reverse engineering.

OR

10. a) What do you understand by software project management? How quality of software can be assured?

    b) Write a brief notes on Risk Assessment.

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