Reg. No. :

Question Paper Code: 45015

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Fifth Semester

Civil Engineering

14UCE505 - WATER SUPPLY ENGINEERING

(Regulation 2014)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. When fluoride concentration in water exceeds 1.5 mg/l or so, the disease that may cause is

    (a) Methemoglobinemia   (b) Fluorosis
    (c) Dental carries in children   (d) Poliomyelitis

2. Which source of water, among the following, is not a surface source?

    (a) River   (b) Well   (c) Ocean   (d) Lake

3. The maximum pressure, which a pipe can withstand without any leakage, during hydrostatic pressure test, is called the

    (a) working pressure   (b) test pressure
    (c) design pressure   (d) hydrostatic pressure

4. The formula which is most appropriate to the design of pressure pipes is

    (a) Darcy weisbach formula   (b) Mannings formula
    (c) Chezy's formula   (d) Dupuit's formula

5. Sedimentation can remove in organic particles, having specific gravity upto, say

    (a) *2.65*   (b) 1.65   (c) 1.2   (d) *1.03*

6. The percentage of chlorine in fresh bleaching powder is about

    (a) 10-15   (b) 20-25   (c) 30-35   (d) 50-60

7. Iron and manganese can be removed from water by

    (a) Boiling   (b) Aeration followed by coagulation

    (c) Chlorination   (d) Activated carbon

8. Activated carbon is added to water to remove tastes and odours

    (a) Before coagulation   (b) After coagulation

    (c) Before filtration   (d) all the above

9. The water meter, which is installed on individual house connections, on municipal supplies, is

    (a) a velocity meter   (b) An inferential meter

    (c) a displacement meter   (d) None of these

10. The suitable layout for a water supply distribution system, for a city of roads of rectangular pattern is

    (a) dead end system   (b) grid iron system

    (c) ring system   (d) radial system

PART - B (5 x 2 = 10 Marks)

11. State the objectives of water supply system.

12. Write the factors influencing the selection of pumps.

13. Classify screens.

14. Define hardness.

15. Name the leak detection methods practiced in water supply scheme.

PART - C (5 x 16 = 80 Marks)

16. (a) (i)   Discuss the factors governing selection of particular sources of water.   (8)

    (ii)   Describe in detail about the various demands in detail.   (8)

Or

(b) Explain any four physical and chemical analysis to be carried out for drinking water.

                  (16)

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17. (a) Describe in detail about the various joints that are used in cast iron pipes with neat sketches. (16)

Or

(b) (i) Differentiate between wet intake and dry intake towers. (8)

(ii) List out the different materials used in water supply pipes. (8)

18. (a) A system of water has to purify the water for a town whose daily demand is 9×10^6 litres/day. Design the suitable sedimentation tank. Assume the velocity of flow as 22cm/min and the detention period as 8 hours. (16)

Or

(b) Explain in detail about the different minor method of disinfection. Also write the factors affecting the disinfection. (16)

19. (a) Describe in detail about the "Zeolite Process" of water softening method in detail. (16)

Or

(b) Briefly explain the demineralization process used in water purification process detail. (16)

20. (a) With a neat sketch explain the one pipe system of plumbing. (16)

Or

(b) (i) Discuss the general design principles of water supply in buildings. (8)

(ii) Explain the House service connection with neat sketch. (8)

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