Reg. No. : | | | | | | | | | | |

Question Paper Code: 45105

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

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. The growth of population can be conveniently represented by a curve, which is amenable to mathematical solution. The type of this curve is

    (a) Semi-log curve   (b) Straight Line curve
    (c) Logistic curve   (d) Exponential curve

2. 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

3. 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

4. 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

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. The suitable method for disinfection of swimming pool water is

    (a) ultra violet rays treatment   (b) lime treatment
    (c) chlorination   (d) potassium permanganate

8. Iron and manganese can be removed from water by

    (a) boiling   (b) aeration followed by coagulation
    (c) chlorination   (d) activated carbon

9. 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

10. Scour valves are provided

    (a) at the street corners to control the flow
    (b) at the dead ends to drain out the waste water
    (c) at every submit of the rising main
    (d) at the foot of the rising main along the slope, to prevent back running of water

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. What is mean by water softening?

15. List out the methods of Leak detection.

PART - C (5 x 16 = 80 Marks)

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16. (a) The population of locality as obtained from census report are as follows:

Census year	2001	2011	2021	2031	2041
Population	350000	466000	994000	1560000	1623000

Estimate the population of the locality in the year 2091 by using incremental increase method. (16)

Or

(b) Explain any four physical and chemical analysis to be carried out for drinking water. (16)

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

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

Or

(b) Estimate the hydraulic gradient in a 2m diameter smooth concrete pipe carrying discharge of 3 cumecs at 10^0C temperature by using (i) Darcy-Weisbach formula (ii) Hazen Williams formula. (16)

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

Or

(b) Explain the following methods of Disinfection: (i) Treatment with Ozone (ii) Treatment with UV Rays. (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 in detail. (16)

20. (a) How the detection of leakage in the underground distribution pipes is carried out? Discuss various methods in detail. (16)

Or

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(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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