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09ARC3.3

**Third Semester B.Arch. Degree Examination, June/July 2015**  
**Building Services – I**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions.**

- 1 a. What are important points to be considered for a proposed water supply scheme? (08 Marks)  
b. Explain 5 factors considered that affect the "RATE OF DEMAND". (05 Marks)  
c. Population of town was obtained from census data. Forecast the future population by Airthematic increase method and incremental increase method in 2000. (07 Marks)

Population	Year
41000	1960
44600	1970
47100	1980
50000	1990

- 2 a. With the help of neat sketch, explain the working of tube well. (09 Marks)  
b. The water is to be raised from a tube well to an overhead storage tank. Work out the BHP of the pump from the following data:

Discharge of tube well	- 30 lit/sec
Length of raising main	- 200 mts
Coefficient of friction	- 0.018
RL of ground level	- 200.00
RL of water level in tube well	- 192.00
Depressed head	- 5.00 mt
RL of water level in over head tank	- 215.00
Combined efficiency	- 75%
Velocity of rising main	- 1.8mt/sec.

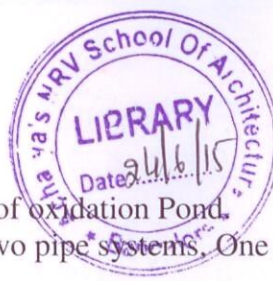
(11 Marks)

- 3 a. What are the drinking water standards of following parameters?  
i) Turbidity ii) Iron content iii) Hardness iv) Chlorides. (06 Marks)  
b. Explain briefly – "Water Borne Diseases". (04 Marks)  
c. Explain different types of coagulants used in water treatment plant. (10 Marks)

- 4 a. Bring about 8 essential differences between slow sand filters and rapid sand filters. (08 Marks)  
b. What is disinfection? Explain any four minor methods of disinfection. (07 Marks)  
c. Explain grid iron method and circular method of distribution pipe net out. (05 Marks)

- 5 a. Explain the systems of sewerage and list 2 advantages and disadvantages in each system. (09 Marks)  
b. With the of neat sketch, explain deep manhole. (11 Marks)

- 6 a. With help of neat sketch, explain 3 types of traps used in house drainage. (08 Marks)  
b. With help of neat sketch, explain the working of septic tank. (08 Marks)  
c. With neat sketch, explain working of aqua privy. (04 Marks)



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- 7 a. Explain with neat sketch working of oxidation Pond. (09 Marks)  
b. Explain briefly one pipe system, two pipe systems. One pipe system partially ventilated. (11 Marks)
- 8 Write short notes on the following (any four):  
a. Design period and its significance in w/s scheme.  
b. Storage reservoir  
c. Air relief valve  
d. Break point chlorination  
e. Joints used in pipes  
f. Trickling filters. (20 Marks)

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