

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)**

**CLASS: BARCH
BRANCH: ARCH.**

**SEMESTER: III
SESSION : MO/2018**

SUBJECT : AR3305 BUILDING SERVICES-I (WATER SUPPLY AND SANITATION)

TIME: 1.5 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 30.
 2. Candidates may attempt for all 30 marks.
 3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. The missing data, if any, may be assumed suitably.
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- Q1 (a) Show the water demand variations during the different hours of the day with the help of a graph. [2]
(b) Describe the advantages and disadvantages of the dead-end system of water distribution. [3]
- Q2 (a) What do you understand by 'continuous' and 'intermittent' system of water supply? What are their relative advantages and disadvantages? [2]
(b) Explain with a neat sketch, the house water connection from the municipal water mains. [3]
- Q3 (a) What is meant by 'Water hammer', and how is it produced in pipes conveying water under pressure? [2]
(b) Write short notes with proper sketches on: i) Sluice Valve ii) Pressure Relief valve [3]
- Q4 Explain the process of treatment of surface turbid water with the help of a flow diagram. [5]
- Q5 (a) Explain briefly the general principles governing the design of a sanitary plumbing system. [2]
(b) Describe briefly the various sewage disposal systems. [3]
- Q6 Design a septic tank with the following data and accordingly draw the sketch plan & section: [5]
Number of users=100, detention period = 24 hrs, De-sludging period= 1 year, consumption of water = 150 litres/capita/day, sludge deposition@ 30 litres/capita/year.

::: 10/09/2018 E :::::