

Total No. of printed pages = 2

CT-402/WS&SI/4th Sem/2013/M

**WATER SUPPLY AND SANITARY  
INSTALLATION**

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks  
for the questions.

1. What do you understand by sewer appurtenances ?  
Enumerate various appurtenances commonly  
used. 14
  
2. (a) What is an intake structure ? Enumerate the  
various types of intakes and discuss in  
details any one of them. 7
  
- (b) Mention various types of pumps. Describe the  
principle of working of reciprocating pumps. 7
  
3. (a) Explain various principles that should be kept  
in mind while designing a house drainage  
system. With the help of diagram, explain  
various systems of plumbing. 10

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- (b) Explain any one type of privy used in rural area. 4
4. (a) Design a septic tank for the following data :  
Number of persons : 100  
Sewage / capacity / day = 120 litres  
Desludging period = 1 year. 10
- (b) Discuss advantages and disadvantages of an Imhoff tank. 4
5. (a) Discuss with the help of diagrams, various methods of laying out the distribution system. 7
- (b) From a clear water reservoir 2.5m deep and maximum water level at 32.00m water is to be pumped to an elevated reservoir at 80.00m at a constant rate of 8,10,000 litre/hour. The distance is 1200m. Give the economical diameter of the rising main and the water horsepower of the pump. Neglect minor losses and take  $f = 0.04$ . 7