

Total No. of printed pages = 3

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

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.

Answer any *five* questions.

1. (a) What are the various sources of water ? 4
(b) What do you understand by precipitation ?
Explain various types of precipitation. 10
2. (a) What is meant by rain gauge ? Explain any
one type of automatic rain gauge. 7
(b) What are intakes ? What are the various types
of intakes ? Describe river intake. 7
3. (a) Mention different types of pumps used in
water work practice. 2

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- (b) Describe the principle of working of centrifugal pump. 6
- (c) From a clear water reservoir 2.5m deep and maximum water level at 32.00m water to be pumped at an elevated reservoir at 80.00m at a constant rate of 8,10,000 litre per hour. If diameter = 0.57m and the distance is 1200m determine its water horse power. 6
4. (a) Explain with the help of diagram various methods of laying out the distribution system. 10
- (b) Compare between separate system and combined water carriage system. 4
5. (a) What is meant by settling velocity? Impervious area of 20 hectares is to be served by a sewer line. This area is subjected to storm duration of storm is 30 minutes. Determine the maximum runoff. 7
- (b) Calculate the velocity of flow and discharge in a sewer of circular section having diameter of 1m laid at a gradient of 1 in 500. Use Mannings formula taking $N = 0.012$. Assume the sewer is running half full. 7

6. (a) Describe with neat sketches various types of joint used in sewer. 5
- (b) Write a note on testing of sewers. 5
- (c) Explain various principles that should be kept in mind while designing a house drainage system. 4
7. (a) Explain with the help of diagram various systems of plumbing used in house drainage. 6
- (b) What is meant by sewer appertenances? Enumerate various types of sewer appertenances and explain any one of them. 8