

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – SUMMER • 2014****Subject Code: 161301****Date: 19-05-2014****Subject Name: Municipal Engineering****Time: 10:30 am - 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Enlist and explain the factors affecting domestic demand of water. **07**
 (b) With the help of sketch write short note on “Manholes” **07**

- Q.2** (a) Explain the factors on which the location of intake work depends. Describe any one type of intake work. **07**
 (b) With the help of neat sketch, explain any one type of distribution system along with its advantages and drawbacks. **07**

OR

- (b) Highlight the differences between sanitary sewers, storm sewers and combined sewers. Explain the conditions under which each type of sewer is applicable. **07**
Q.3 (a) With the help of a neat sketch explain the procedure for laying of sewers. **07**
 (b) Write a short note on “Traps” **07**

OR

- Q.3** (a) Explain the Rational Method for estimating the quantity of storm water. Explain the factors affecting quantity of storm water. **07**
 (b) A 2.0m diameter circular sewer is laid on a slope of 0.008. If $n=0.013$ at all depths of flows, determine: **07**
 (i) Discharge and velocity when the sewer is running full.
 (ii) Discharge and velocity when sewer is flowing at a depth of 0.3m.

- Q.4** (a) With the help of neat sketches write short notes on: **07**
 (i) Gate valves. (ii) Air relief valves..
 (b) Highlight the significance of pumps in water supply system. With the help of a neat sketch explain any two types of pumps. **07**

OR

- Q.4** The observed cumulative drafts by a town are stated below (the drafts are at four hour interval): **14**

Time	4 AM	8 AM	Noon	4 PM	8 PM	Midnight
Cumulative draft (in 10^6 L)	0.5	1.4	2.6	3.7	4.5	5.0

Determine the balancing capacity for the above draft when pumping is done between 8.0 am and 4.0 p.m.

- Q.5** (a) Explain the terms: (i) Self cleaning velocity. (ii) Non scouring velocity. **08**
 (iii) Sewage (iv) Sullage
 (b) Explain how cast iron pipes are joined by spigot and socket joint. Draw a neat sketch of the joint. **06**

OR

- Q.5** (a) With the help of a neat sketch write short notes on: **08**
 (i) Inverted siphon. (ii) Storm relief work –any one type
 (b) Explain gravity system, pumping system and mixed water supply system. **06**
