

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2024****Subject Code:3141312****Date:03-07-2024****Subject Name: Municipal Engineering****Time:10:30 AM TO 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.
4. Simple and non-programmable scientific calculators are allowed.

**Marks**

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|------------|---|-----------|
| <b>Q.1</b> | (a) What is the necessity of water supply scheme in present day community?  | <b>03</b> |
|            | (b) Explain quality and quantity of surface water.  | <b>04</b> |
|            | (c) Prepare a list of pumps used in water supply and explain any two.   | <b>07</b> |
| <b>Q.2</b> | (a) Explain the necessity of providing manhole in sewer lines.  | <b>03</b> |
|            | (b) Differentiate between gravity system and pressurized system of water supply.  | <b>04</b> |
|            | (c) What are the factors on which location of intake works depend? Draw a neat sketch of river intake and explain its working.          | <b>07</b> |
| <b>OR</b>  |   |           |
|            | (c) What are the requirements for good distribution systems? Describe in brief various types of distribution systems.                   | <b>07</b> |
| <b>Q.3</b> | (a) What precautions should be taken to prevent the explosions in sewers?   | <b>03</b> |
|            | (b) Enlist different Storm relief works and explain any one with sketch.  | <b>04</b> |
|            | (c) Sketch and explain following : 1) Air relief valve 2) Sluice valve  | <b>07</b> |
| <b>OR</b>  |   |           |
| <b>Q.3</b> | (a) Differentiate between drains and sewers.  | <b>03</b> |
|            | (b) Write down the procedure for laying of Sewer Pipes.   | <b>04</b> |
|            | (c) What is the function of hydrants in the distribution system? With the help of neat sketch describe any two hydrants.                | <b>07</b> |
| <b>Q.4</b> | (a) Define : 1) Porosity 2) Permeability 3) Aquifer   | <b>03</b> |
|            | (b) How the reservoir storage capacity determined?  | <b>04</b> |
|            | (c) Draw neat sketches and describe the following joints :<br>1) Expansion joint 2) Flanged joint                                       | <b>07</b> |
| <b>OR</b>  |   |           |
| <b>Q.4</b> | (a) What are percussion wells? How do they differ from tube wells?  | <b>03</b> |
|            | (b) What are the factors that directly affect the per capita demand of a town? Explain any two.   | <b>04</b> |
|            | (c) Explain: 1) How is routine maintenance of distribution system carried out?<br>2) How are the leaks in distribution system detected? | <b>07</b> |
| <b>Q.5</b> | (a) Clearly differentiate between manhole and drop manhole.   | <b>03</b> |
|            | (b) Explain the system of plumbing.   | <b>04</b> |
|            | (c) Write a note on sewer materials. State the criteria for selection of sewer materials.   | <b>07</b> |
| <b>OR</b>  |   |           |
| <b>Q.5</b> | (a) Write a short note on maintenance and cleaning of Sewers.   | <b>03</b> |
|            | (b) How the sewer lines are tested? What precautions are taken during the back filling of trenches?                                     | <b>04</b> |
|            | (c) Enlist the different types of sewer sections & explain any one with neat sketch.  | <b>07</b> |

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