

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-IV EXAMINATION – WINTER 2025

Subject Code:3141312

Date:24-11-2025

Subject Name:Municipal Engineering

Time:02:30 PM TO 05:00 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
Q.1 (a) What is the necessity of water supply scheme?	03
(b) Narrate the different sources of water for water supply in a town.	04
(c) Define: (1) Storm water (2) Infiltration (3) Porosity (4) permeability (5) aquifers (6) specific yield (7) aquiclude	07
Q.2 (a) Highlight the duties of water works engineers.	03
(b) What factors affect the design of an intake structure?	04
(c) Discuss in detail about quality and quantity of surface water and their usefulness for public water supplies	07
OR	
(c) Explain the layout of water treatment plant with neat sketch.	07
Q.3 (a) What is intake tower?	03
(b) Write a short note on the wastage of water in public water supplies.	04
(c) How the total quantity of water required by a town is estimated?	07
OR	
Q.3 (a) What is design period in designing water supply scheme?	03
(b) Differentiate between Separate sewerage system & combined sewerage system.	04
(c) Explain Canal Intake with a neat sketch showing all the components.	07
Q.4 (a) Write a note on fire hydrant.	03
(b) What is the function of hydrants in the distribution system? With the help of neat sketch describe hydrants	04
(c) Differentiate between: (i) Dead end system and radial system of water supply (ii) Gravity system and pressurized system of water supply	07
OR	
Q.4 (a) What is water meter? Enlist the types of water meter.	03
(b) Describe inverted siphon with neat sketch.	04
(c) Classify the pumps based on their principles of operation & power requirement.	07
Q.5 (a) What is drop manhole?	03
(b) How will you calculate the total horse power required for a pump?	04
(c) Write a note on 'Sewer cleaning equipment and devices.	07

OR

- Q.5** (a) Distinguish between expansion joint and flanged joint. **03**
(b) Discuss partially ventilated single stack plumbing system for house drainage. **04**
(c) List of various sewer appurtenances and explain drop manhole with neat sketch. **07**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2024

Subject Code: 3141312

Date: 27-11-2024

Subject Name: Municipal Engineering

Time: 02:30 PM TO 05:00 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
Q.1 (a) Draw a complete flow diagram of water supply scheme.	03
(b) Differentiate between gravity system and pressurized system of water supply.	04
(c) Write a note on Sanitary works.	07
Q.2 (a) Define the following terms: (i) Aquifer (ii) Design period (iii) Porosity.	03
(b) Enlist the various pipe joints and briefly explain any one.	04
(c) Enlist and explain the factors affecting domestic water demand.	07
OR	
(c) Define water demand and explain the various types of water demand.	07
Q.3 (a) Classify the pumps based on their principles of operation & power requirement.	03
(b) Give the design periods for various components of water supply scheme.	04
(c) Explain construction and working of Gate Valve with neat sketch.	07
OR	
Q.3 (a) Explain Dead-end system of water distribution.	03
(b) Write a short note on hydrants.	04
(c) Draw a neat sketch of River intake work and explain its working.	07
Q.4 (a) Define the following terms.: (i) Self cleansing velocity (ii) Dry weather flow (iii) Non scouring velocity	03
(b) Differentiate between drains & sewers.	04
(c) Enlist various systems used in House Plumbing. Explain any one in detail.	07
OR	
Q.4 (a) Define the following terms. (i) Infiltration (ii) storm water (iii) sewage	03
(b) Difference between storm water & sanitary sewage.	04
(c) Enlist the different types of materials for sewers. Explain any two in detail.	07
Q.5 (a) Write precautions required to prevent the explosions in sewers.	03
(b) Differentiate between Separate System & Combined System of Sewerage System.	04
(c) Explain the procedure for laying of sewer lines.	07
OR	
Q.5 (a) Define: (i) Non Scouring Velocity (ii) Waste Pipe (iii) Dry Weather Flow	03
(b) Enlist the safety equipments used for sewer maintenance works with their intended use.	04
(c) List of various sewer appurtenances and explain drop manhole with neat sketch.	07

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2023****Subject Code:3141312****Date:24-01-2024****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
Q.1	(a) Draw a neat flow diagram of water supply scheme.	03
	(b) Define the following terms: [i] Invert [ii] Grey water [iii] Sewage [iv] Manhole	04
	(c) Write a short note on Importance and reliability of Water works.	07
Q.2	(a) Write a short note on ideal population growth curve.	03
	(b) Differentiate between combined and separate system of sewerage.	04
	(c) What are the factors on which location of intake works depend? Draw a neat sketch of lake intake and explain its working.	07
	OR	
	(c) Prepare a list of different types of valves used in water supply and explain any two in brief with neat sketch.	07
Q.3	(a) Differentiate between gravity system and pressurized system of water supply.	03
	(b) Enlist the requirements of good meter.	04
	(c) Enlist different types of layouts for water distribution system and explain any two in detail.	07
	OR	
Q.3	(a) Define the following terms: [i] Porosity [ii] Water Bearing stratum [iii] Aquifer	03
	(b) Write down the procedure of laying of water distribution pipe.	04
	(c) Prepare a list of pumps used in water supply and explain any two with sketch.	07
Q.4	(a) What do you understand by continuous and intermittent supply system of water?	03
	(b) What should be the characteristics of materials to be used for sewer construction?	04
	(c) How does the sewage flow vary from hour to hour, day to day and season to season in what way does this affect the design of sewage system?	07
	OR	
Q.4	(a) Define the following terms: [i] Self cleansing velocity [ii] Dry weather flow [iii] Soil pipe	03
	(b) Write a short note on fire hydrant.	04
	(c) Write a note on sewer sections. Illustrate your answer with the help of neat sketches	07

- | | | | |
|------------|------------|--|-----------|
| Q.5 | (a) | What are the requirements of a good trap? | 03 |
| | (b) | Explain the hydrostatic test for laying of new sewer pipelines. | 04 |
| | (c) | List of various sewer appurtenances and explain drop manhole with neat sketch. | 07 |
| OR | | | |
| Q.5 | (a) | Write a short note on maintenance and cleaning of Sewers. | 03 |
| | (b) | Enlist various types of Sewer joints and explain anyone. | 04 |
| | (c) | Enlist various systems used in House Plumbing and explain any one in detail. | 07 |

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV(NEW) EXAMINATION – WINTER 2022****Subject Code:3141312****Date:17-12-2022****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
Q.1	(a) Draw a neat flow diagram of water supply scheme.	03
	(b) What is the purpose of storm relief works?	04
	(c) Enlist and explain the factor affecting the demand of water.	07
Q.2	(a) Define the following terms: (i) sewage (ii) storm water (iii) infiltration	03
	(b) With the help of a neat sketch write a short note on Manholes.	04
	(c) Give the classification of sources of water. Explain each source in brief.	07
	OR	
	(c) Write a short note on Importance and reliability of Water works.	07
Q.3	(a) Prepare the list of pumps used in water supply.	03
	(b) Write down the difference between: Gravity system and pressurized system of water supply	04
	(c) What are the factors on which location of intake works depend? Draw a neat sketch of river intake and explain its working.	07
	OR	
Q.3	(a) Define the following terms: [i] Porosity [ii] Water Bearing stratum [iii] Aquifer	03
	(b) Write down the difference between: Combined sewerage system and separate sewerage system.	04
	(c) Enlist the distribution systems and explain anyone with a neat sketch, enlisting its merits and demerits.	07
Q.4	(a) Draw a diagram of Dead end system.	03
	(b) Enlist the types of reservoir & explain any one.	04
	(c) Explain construction and working of Gate Valve with neat sketch.	07
	OR	
Q.4	(a) What is coefficient of runoff?	03
	(b) Define the terms: (i) Self-cleaning velocity (ii) Non scouring velocity (iii) Invert (iv) Sullage	04
	(c) Explain the following with neat sketch: [1] Spigot & Socket joint [2] Expansion Joint	07
Q.5	(a) Write a short note on “Traps”	03
	(b) What do you understand by continuous and intermittent supply system of water?	04
	(c) Enlist various systems used in House Plumbing. Explain any one in detail.	07
	OR	
Q.5	(a) Enlist different types of sewer joints.	03
	(b) Enlist the requirements of good meter.	04
	(c) Enlist different types of Materials for Sewers. Explain any two in detail.	07
