

<b>Uka Tarsadia University (Diwaliba Polytechnic)</b>
<b>Diploma in Environmental Engineering</b>
<b>Assignment (Sanitary Engineering-EV1007)</b>

### **Unit -1 Systems of Sanitation**

1. Enlist collection method of sewage and explain 2 method of collection of sewage.
2. Explain comparison between conservancy system and water carriage system.
3. Define following terms: sewage, sullage, siphonage and antisiphonage pipe, vent pipe, soil pipe, garbage, storm water.
4. Enlist merits and demerits of conservancy system.
5. Enlist merit and demerit of water carriage system.
6. Give classification of sewerage system and explain anyone.
7. Write merit and demerit of separate system.
8. Enlist merit and demerit of combined system.
9. Write a note on collection system.
10. Explain sanitary works.
11. Explain aim and objectives of sewage disposal.
12. Define combine and common sewer.

### **Unit -2 Quantity of Sanitary and Storm Sewage**

1. Explain the sources of sanitary sewage.
2. Explain rational method.
3. Enlist factors affecting storm sewage.
4. Explain sewage disposal system.
5. Write short note on Quantity of storm water.
6. Explain seasonal and daily variation of water.
7. What points should be kept in mind while designing sewers?
8. Why the quantity of sanitary sewage is required?
9. Explain factors affecting sanitary sewage.
10. Enlist the method for quantity of storm water.
11. Explain effects of growth of population on quantity of sanitary sewage.
12. What do you understand about rate of water supply?
13. Explain peak rate of flow in sewage.

### **Unit -3 Design of Drains and Sewers**

1. Define and explain functions of drain and sewers.
2. With the help of Crimp and Burge's formula, determine the velocity and discharge of a sewer of 40 cm diameter laid at a gradient of 1 in .
3. Explain materials used in construction of sewers.
4. Write short note on cast iron pipes.
5. Explain open drains.
6. What do you understand about design period and per capita demand.
7. Explain conditions for ideal drain section.
8. Determine the velocity of the flow in a sewer running one half full. The sewer is laid at 1 in 550 slope. The diameter of the sewer is 150 cm. Also determine the discharge flowing through the sewer. Assume  $N=0.012$  in Manning's formula.
9. Write short note on Drain section
10. With the help of Crimp and Burge's formula, determine the velocity and discharge of a sewer of 50 cm diameter laid at a gradient of 1 in 300.
11. Enlist population forecasting method explain anyone.
12. Explain ground water infiltration.
13. Explain per capita sewage flow
14. With the help of Crimp and Burge's formula, determine the velocity and discharge of a sewer of 40 cm diameter laid at a gradient of 1 in 350.
15. Explain estimation of storm runoff.
16. Explain sewer joints.
17. Determine the velocity of the flow in a sewer running one half full. The sewer is laid at 1 in 500 slopes. The diameter of the sewer is 130 cm. Also determine the discharge flowing through the sewer. Assume  $N=0.012$  in Manning's formula.

### **Unit -4 Sewer Appurtenances and Sanitary fittings**

1. Give classification of sanitary fittings.
2. Explain wash basin with neat sketch.
3. Explain sink.
4. Explain flushing tank and its function.
5. Explain street inlets.
6. Explain manhole.
7. Explain sand, grease and oil traps.
8. Explain ventilation of sewers.
9. Write short note on lamp holes.
10. Write short notes on catch basin.

11. Explain gutter inlet.
12. In which section catch pits are provided?
13. Write short note on Drop manhole.
14. What is curb inlet?
15. Enlist classification of water closet

### **Unit -5 Constructions and Maintenance of Sewers**

1. Write short note on excavation of trenches.
2. Explain laying of sewers.
3. Explain joints of sewers.
4. Explain methods for removal of water in detail.
5. Explain hydraulic testing of sewer pipes.
6. Enlist the causes of damage to sewers.
7. Write short note on backfilling of trenches.
8. Explain necessity of maintenance of sewers.
9. Enlist safety equipment used for maintenance work of sewers.
10. Which problems faced during maintenance of sewers?
11. Which safety equipment required for sewer maintenance works?

### **Unit-6 Pumping of Sewage and Ventilation**

1. Explain requirements of good sewage pump.
2. Explain types of pumping station.
3. Write short note on Position of pump.
4. Define and classify pump also explain any one in detail with neat sketch.
5. Write short note on pipes, valves and fittings.
6. Give difference between Combustion and Respiration.