

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST-1 EXAMINATION- FEBRUARY 2024

B.Tech V Semester (Civil)

COURSE CODE (CREDITS): 18B11CE512 (3)

MAX. MARKS: 15

COURSE NAME: SEWAGE TREATMENT AND DISPOSAL

COURSE INSTRUCTOR: NIRAJ SINGH PARIHAR

MAX. TIME: 1 Hour

Note: All questions are compulsory. Marks are indicated against each question in square brackets. Assume suitable data if required.

1. Briefly describe the various systems of sewage collection and differentiate them with respect to their advantages and disadvantages. **[4 Marks][CO1]**
2. Explain various patterns of sewage collection and their topographical suitability with the help of schematic diagrams. **[4 Marks][CO1]**
3. Calculate the velocity of flow and discharge in a 1 m diameter sewer running 0.6 full and laid with a bed slope of 1:500. The rugosity coefficient for sewer material may be taken as 0.012. **[4 Marks][CO2]**
4. A certain district of a city has a projected population of 50000 residing over an area of 40 hectares. Recommend the type of sewerage system and estimate the design discharge for the sewer line for the given data:
 - a. Rate of water supply=200lpcd
 - b. Average impermeability coefficient for the area=0.3
 - c. Time of concentration=50 min
 - d. The sewer line is to be designed for the flow equivalent to wet weather flow plus twice the dry weather flow. **[3 Marks][CO1,CO2]**