

**Roll No.**

**Total No. of Pages : 01**

**Total No. of Questions : 08**

**M.Tech. (Civil Engineering) (Sem.-3)**

# URBAN HYDROLOGY

**Subject Code : MTCE -215**

**M.Code : 74764**

**Date of Examination : 21-12-22**

**Time : 3 Hrs.**

**Max. Marks: 100**

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carry TWENTY marks.

1. What is the return period of storm and which return period commonly used in design? How do you calculate return period in hydrology?
2. What does IDF mean in hydrology? Write the purpose of IDF curve and how this curve is calculated? Also, explain three main elements described in IDF curve.
3. Why open channel flow is important? Which ones are examples of open channel flow and what are the main characteristics of open channel flow?
4. How do you calculate run off from a water shed and what are three surface conditions that will result in more run off? Which run off pattern is the most common?
5. What is storm water drainage system? Explain in detail all storm water drainage structures.
6. What is storm water detention? Why storm water detention is required? Also, discuss advantages of utilizing a storm water detention basin.
7. Discuss impact of urbanization on ground water and explain how ground water is recharged in urban areas?
8. Name various urban storm water models and explain in detail any two of them.

**NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.**