



USN

Grid for USN entry

10CV846

Eighth Semester B.E. Degree Examination, June/July 2017
Water Resources Engineering

Time: 3 hrs.

Max. Marks:100

Note: 1. Answer any FIVE full questions, selecting atleast TWO questions from each part. 2. Assume missing data suitably.

PART - A

- 1 a. Explain the role of any five water management community in water resources engineering. (10 Marks)
b. Discuss the various water resources projects requiring planning. (10 Marks)
2 a. Explain briefly the precipitation process and also explain types of precipitation, with neat sketch. (10 Marks)
b. The value of precipitation and areas of polygons are tabulated below. Calculate average depth of precipitation over the catchment by Thiessen Polygon method. (05 Marks)
3 a. Explain the following : i) Hydrologic losses ii) SCS rainfall - runoff relation. (10 Marks)
b. Define Unit Hydrograph. What are the assumptions in Unit Hydrograph theory? Give any three advantages of it. (10 Marks)
4 a. Briefly discuss the various types of Irrigation methods. (10 Marks)
b. Discuss the various drought management options. (10 Marks)

Table with 2 rows and 9 columns: Rainfall (cm) and Area of polygon (km^2) with numerical values.

- c. Explain Hydrologic cycle, with a neat sketch. (05 Marks)
5 a. Explain the structural and non - structural measures of flood control. (12 Marks)
b. Discuss the benefits of a flood control project. (08 Marks)
6 a. The drainage area of one sector of a town is 20 hectares. The classification of the surface of this area is as follows : (05 Marks)

Table with 3 columns: Percentage of total surface area, Type of surface, Run off coefficient

If the time of concentration for the area is 30 minutes, find the maximum runoff. Use the following formula for intensity of rainfall I = 900 / (t + 60)

- b. What are the essential appurtenances for the functioning of storm sewers? (05 Marks)
c. Discuss the types of surface detention works, with neat sketch. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. 2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.



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- 7 a. Describe with neat sketches, the various types of pavement drainage inlets. (10 Marks)
b. What is a Culvert? Discuss the types of flow control in hydraulic design of culvert. (10 Marks)
- 8 a. Explain briefly the hazard classification of dams given by U.S Army Corps of Engineers. (05 Marks)
b. What is the function of Spillway? Briefly explain the various components of spillway. (08 Marks)
c. List the various types of spillway crest gates. Discuss any one with neat sketch. (07 Marks)
