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10CV846

Eighth Semester B.E. Degree Examination, Dec.2019/Jan.2020

Water Resources Engineering

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART - A

- 1 a. Explain briefly about world's fresh water resources. (06 Marks)
- b. Explain the importance of water management. Explain any two water management sectors. (06 Marks)
- c. List the various agencies included in the water management community and explain the role of state and central government in water conservation? (08 Marks)
- 2 a. Explain Hydrologic cycle. (05 Marks)
- b. Define precipitation and also explain its different types of precipitation. (10 Marks)
- c. The rain fall at 7-rain gauge station in a basin are 60 mm, 90 mm, 60 mm, 50 mm, 20 mm, 40 mm and 70 mm respectively. Calculate the average rain fall in the basin by Arithmetic mean method. (05 Marks)
- 3 a. Define drainage basins and explain the hydrologic loss. (10 Marks)
- b. Develop a 30 minutes SCS triangular unit hydrograph for a water shed of area 550 ha and time of concentration of 50 minutes. (10 Marks)
- 4 a. Explain the impacts of irrigation. (06 Marks)
- b. With neat sketches, explain various methods of surface irrigation. (08 Marks)
- c. Briefly explain the drought management method and their severity. (06 Marks)

PART - B

- 5 a. Define flood plain with neat sketch and explain role of land surface characteristics floods. (08 Marks)
- b. Explain the flood damage and net benefit estimation. (06 Marks)
- c. What are the hydrologic, hydraulic and Economic relationship used in flood damage reduction studies. (06 Marks)
- 6 a. Explain the storm water management. (04 Marks)
- b. Draw a typical sketch of storm water collection system showing principle elements and also mention guide line for storm sewer design. (06 Marks)
- c. What purpose of detention basin and how its performance is evaluated after its construction? (10 Marks)
- 7 a. Why drain inlets are used in street Gutters? Explain any three types of drain inlet with neat sketches. (10 Marks)
- b. Explain hydraulic design of culverts. (10 Marks)
- 8 a. Distinguish between rigid and non rigid dams and comment on hazard classification of dams. (08 Marks)
- b. At an energy dissipater structure below a low spillway the discharge is 19 m³/s and the energy loss is 1 m at hydraulic Jump forming there in, determine the depths of flow at both ends of the Jumps. (12 Marks)

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12/8 JAN 2020

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.

