

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- September 2016

B.Tech V₁ Semester

COURSE CODE: 10B11CE513

MAX. MARKS: 15

COURSE NAME: Water Resource and Irrigation Engineering

COURSE CREDITS: 04

MAX. TIME: 1Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Prefer answering in sequence.

Q.1 Answer the following in brief:

(1x5=5)

- (a) Explain the water-budget equation and its components by means of a neat sketch.
- (b) Differentiate frontal and non-frontal precipitation.
- (c) Mention the requisite conditions for the occurrence of precipitation.
- (d) Briefly explain DAD curve and its basic characteristics.
- (e) Calculate the probability of a 10 year flood to occur at least twice in next 4 years.

Q.2 Briefly describe the different types of phenomenon from which the precipitation can occur.

(3)

Q.3 A square catchment area has its left lowermost coordinates as (0,0) and its stretch is of 4 km.s. The rainfall stations installed have coordinates (1,1), (1,3), (3,3) and (3,1) with precipitations of 5, 10, 8 and 12 cm.s respectively. Determine the mean precipitation using Thiessen's polygon method.

(2)

Q.4 In a certain river basin, there are 4 rain gauge stations with their normal annual precipitations amounting to 750, 560, 440 and 400 mm respectively. Determine the optimum no. of rain gauge stations required to limit the error in calculation of mean precipitation to 8%.

(2)

Q.5 Explain the different types of snow gauges used in general practice.

(3)