R09

Code No: 09A50105

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD
B. Tech III Year I Semester Examinations, May/June – 2013
Water Resources Engineering-I
(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
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1.a) Define Isolar and Isotherm.
b) What is a rainfall hyetograph? How is it derived from a given rainfall mass curve?
c) Described the three methods of determining average depth of rainfall over the area. [15]

2.a) Explain how the Evapotranspiration can be estimated using the Blaney-criddle equation.
b) What are the factors affecting Infiltration? [15]

3.a) Distinguish between:
i) Over land flow and Interflow
ii) Depression storage and detension storage
iii) Rainfall excess and effective rainfall.
b) What is a S-curve hydrograph? How is it constructed? [15]

4.a) Explain the terms cone of depression and Radius of Influence
b) Determine the yield from a 35 cm diameter well under a drawdown of 10m in the well, if the radius Influence and hydraulic conductivity are 200m and 5.0m/day respectively. The aquifer is unconfined with a thickness of 60m. [15]

5.a) Write a short note on standards of quality for Irrigation water.
b) Explain briefly about types of Irrigation with neat sketches. [15]

6.a) Explain about the types of Irrigation efficiencies.
b) Derive the relationship between Duty and Delta of a crop. [15]

7.a) What is a Regime channel and explain the Kennedy's theory for the design of Irrigation channel in alluvial soil?
b) A stable channel is to be designal for the discharge of 40 m^3/s and f = 1.0. Calculate the dimensions of the channel using Lacay's regime equations. Assume any other data if necessary. [15]

8.a) What is a design discharge? How it can be computed using rational formula and SCS curve number methods.
b) How do you estimate the steam flow and explain any one method? [15]

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