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R-11 / R-13

Code: 1G653

III B.Tech. I Semester Supplementary Examinations November 2018

Engineering Hydrology-I

(Civil Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any **five** questions

All Questions carry equal marks (**14 Marks** each)

1. a) Describe about hydrologic cycle
b) Explain about forms of precipitation
2. a) Describe about evaporation
b) Explain different methods for measuring evaporation
3. a) Define stream gauging
b) During a flood all the gauge sites of the river Penna in Andhra Pradesh are submerged. From the flood marks the following data were collected. Compute the discharge. River stage at two sites, 1.45 Km apart are 245.00 m and 280.25 m respectively, Mean cross-section of the channel is 335 m². Mean wetted perimeter of the area is 98 m. manning's n = 0.035.
4. a) Discuss about Unit Hydrograph
b) Explain the derivation of Unit Hydrograph
5. a) Discuss about occurrence of groundwater
b) Explain about (i) permeability (ii) transmissivity (iii) storativity
6. a) Explain about necessity and importance of irrigation.
b) Define irrigation. Explain about types of irrigation.
7. a) Explain relation between duty and delta
b) If delta for a crop is 140 mm and irrigated area 300 Ha compute duty.
8. Define canal-lining. Explain different methods of canal-lining

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III B.Tech. I Semester Supplementary Examinations November 2018

Structural Analysis-II

(Civil Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any **five** questionsAll Questions carry equal marks (**14 Marks** each)

- Derive the expression for Eddy's Theorem
 - Determine the Horizontal Thrust for Three hinged arch which is subjected to effect of temperature.
- A two hinged semicircular arch of radius R carries a load W at the crown. Show that the horizontal thrust at each support is $W/2$. Assume uniform flexural rigidity.
- Analyze the given frame as shown in fig.2 by using Slope-Deflection method and assume uniform flexural rigidity.

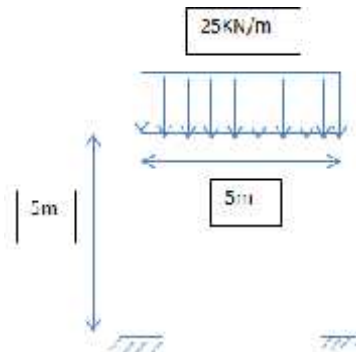


Fig .2

- Analyze the given continuous beam by using Kani's Method in which the total span of the beam is 15m. The span AB = BC = CD = 5m. The load acting on the span AB = 90KN which is acting at a distance of 3m from left end "A", the span BC = 40KN/m and CD = 60KN which is acting at a distance of 2m from right end "D". For span AB and CD it is "I" and for BC it is 1.5 I. The ends "A" and "D" are fixed and the remaining are simply supported.
- Illustrate the methodology of analysis beams without relative displacements at ends?
- Analyze the given Continuous beam as shown in fig.14 by using Flexibility Method.

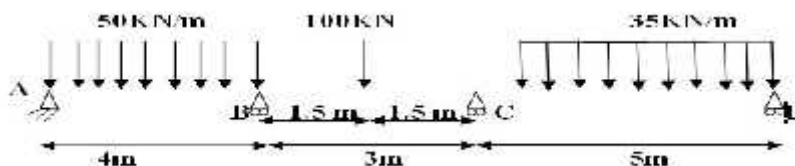


Fig .14

- Explain the flexibility method of matrix analysis?
- Predict the collapse load factor for a fixed beam with uniformly distributed load of W KN/m length. Fully plastic moment of the section is M_p .
