(51)

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS- 2026

B.Tech- VI Semester (CE)

COURSE CODE (CREDITS): 23B11CE611 MAX MARKS: 25

COURSE NAME: WATER RESOURCE ENGINEERING

COURSE INSTRUCTOR: DR.NIRAJ SINGH PARIHAR MAX. TIME: 1 Hour 30 Min

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Note: *(a) All questions are compulsory.*

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c) Use of calculator is allowed

<table>
<tr><th>Q.No</th><th>Question</th><th>CO</th><th>Marks</th></tr>
<tr><td>Q1</td><td>Derive the intensity- duration curve from the following data of a storm:
<table>
<tr><td>Duration(min)</td><td>0</td><td>30</td><td>60</td><td>90</td><td>120</td></tr>
<tr><td>Accumulated Precipitation(cm)</td><td>-</td><td>5.0</td><td>7.5</td><td>8.5</td><td>9.0</td></tr>
</table></td><td>CO1</td><td>[06]</td></tr>
<tr><td>Q2</td><td>Briefly describe the standard infiltration capacity curve. Derive and simplify the Horton's equation and explain its significance graphically.</td><td>CO1</td><td>[06]</td></tr>
<tr><td>Q3</td><td>The following set of data were observed from a successive 15 min period of a 105 min storm in a catchment:
<table>
<tr><td>Duration(min)</td><td>15</td><td>30</td><td>45</td><td>60</td><td>75</td><td>90</td><td>105</td></tr>
<tr><td>Rainfall(cm/hr)</td><td>2.0</td><td>2.0</td><td>8.0</td><td>7.0</td><td>1.25</td><td>1.25</td><td>4.5</td></tr>
</table>
If the value of φ-index is 3 cm/hr, estimate the net runoff, the total rainfall and the value of W-index.</td><td>CO1,2</td><td>[08]</td></tr>
<tr><td>Q4</td><td>Provide a brief description of the components of a hydrograph with the help of a representative figure.</td><td>CO2</td><td>[05]</td></tr>
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