

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2026

B.Tech-IV Semester (CSE/IT/BT/ECE/CE)

COURSE CODE (CREDITS): 25B11CE415 (3)

MAX. MARKS: 25

COURSE NAME: COMPUTER AIDED PLANNING AND COSTING

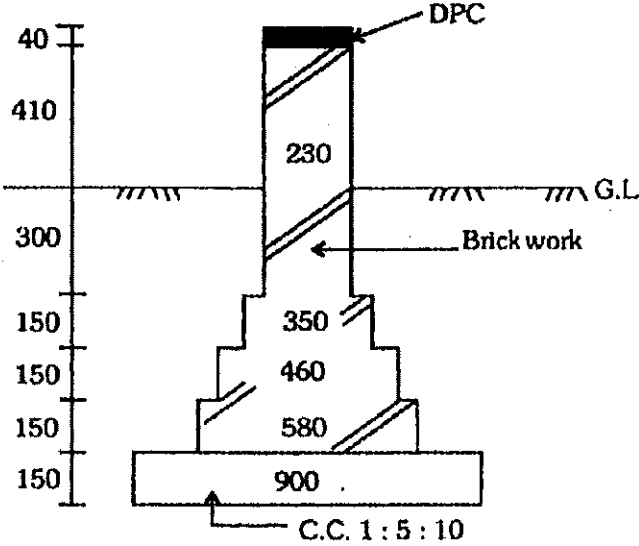
COURSE INSTRUCTOR: Dr. KAUSHAL KUMAR

MAX. TIME: 1.5 Hour

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

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

(c) Use of calculators is allowed.

Q.No	Question	CO	Marks
Q1	<p>Calculate the following quantities from the given sketch for a room with internal dimensions 5000 mm × 4000 mm and one door opening of size 1000 mm × 2100 mm:</p> <p>(i) Quantity of 40 mm thick D.P.C. (Damp Proof Course) in cement concrete of mix 1:2:4, including waterproofing compound.</p> <p>(ii) Quantity of earthwork in excavation for the foundation trench.</p>  <p>Note : All dimensions are in mm</p>	1	5
Q2	<p>Define cutting and filling in earthwork operations. Explain the procedure for calculating the volume of earthwork in cutting and filling, and discuss the importance of balancing earthwork in construction projects.</p>	2	4

Q3	<p>Calculate the quantity of earthwork required for an embankment that is 150 m long and 10 m wide at the top. The side slopes are 2 horizontal to 1 vertical. The depths at different chainages are provided below:</p> <table border="1" data-bbox="328 331 1174 465"> <tr> <td>Chainage (m)</td> <td>0</td> <td>30</td> <td>60</td> <td>90</td> <td>120</td> <td>150</td> </tr> <tr> <td>Ground Level (m)</td> <td>0.60</td> <td>1.2</td> <td>1.4</td> <td>1.6</td> <td>1.4</td> <td>1.6</td> </tr> </table> <p>Use the mid-sectional area method to compute the earthwork quantity.</p>	Chainage (m)	0	30	60	90	120	150	Ground Level (m)	0.60	1.2	1.4	1.6	1.4	1.6	2	6
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Q4	<p>An RCC beam 350 mm wide and 500 mm deep with a length of 5000 mm is reinforced with four numbers of 12 mm bars that are placed in one single row.</p> <ul style="list-style-type: none"> <li>• Out of the four bars, two of the bars are straight and two of the bars are bent up. Also, two additional anchor bars are provided on the top with a 10 mm diameter.</li> <li>• Stirrups of a diameter of 6 mm are provided at a c/c spacing of 150 mm.</li> </ul> <p>(a). Determine the total quantity of steel required and, (b) Prepare the bar bending schedule:</p>	3	5+5 = 10														