

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

B.Tech-V Semester (CE)

COURSE CODE (CREDITS): 10B11CE514 (3)

MAX. MARKS: 15

COURSE NAME: FOUNDATION ENGINEERING

COURSE INSTRUCTORS: DR. NIRAJ SINGH PARIHAR

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

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

Q.No	Question	CO	Marks
Q1	Discuss the major classification of foundations and explain the mode of failures of the footings based on the soil and foundation type.	CO2	5
Q2	Derive the relation for critical excavation depth using pressure distribution diagram for a) A vertical unsupported cut in a clayey soil b) A vertical unsupported cut with a surcharge of 'q' kN/m ² .	CO1	5
Q3	A vertical excavation was made in a clay deposit having unit weight of 20 kN/m ³ which caved in after digging 4 m below ground surface. (a) Assuming angle of internal friction as zero, estimate the value of cohesion. (b) If the same clay is to be used as a backfill material for a retaining wall up to 8 m height, calculate the total active and passive earth pressures likely to act on the wall assuming sufficient wall yield to allow Rankine's deformations.	CO1	5