Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2021

Course: Professional Electives III- Foundation Engineering **Semester: VI**
Program: B Tech Civil Engineering **Time 03 hrs.**
Course Code: CIVL 3005 **Max. Marks: 100**
Instructions: Use of IS codes allowed, Assume any necessary data

SECTION A

S. No.		Marks	CO
Q 1	a) The _____ of foundations is needed for dimensioning the foundation for any structure. b) Name any four terms related to bearing capacity of soil.	**5**	**CO1**
Q 2	Name any five equipment used for pile driving.	**5**	**CO2**
Q 3	List any five parts of a well foundation.	**5**	**CO3**
Q 4	Name the types of machine foundations.	**5**	**CO4**
Q 5	a) A foundation whose width is greater than the depth is termed as_____ foundation. b) An anchor pile means a pile meant for resisting _____ forces. c) Name the materials used for piles.	**5**	**CO1**
Q 6	List the factors affecting bearing capacity of soil.	**5**	**CO2**

SECTION B

Q 7	A footing 3m square is laid at a depth of 1.5 m below the ground surface. Determine the net ultimate bearing capacity using BIS formula. Take γ =19 kN/m3, ϕ =30˚ and c= 0. For ϕ =30˚, take Nc =30.1, Nq =18.4 and Nγ = 22.4.	**10**	**CO1**
Q 8	Describe the necessity of deep foundations.	**10**	**CO2**
Q 9	Explain the issues related to well sinking and how they can be eliminated.	**10**	**CO3**
Q 10	Illustrate with neat sketches ‘degree of freedom’ in machine foundation.	**10**	**CO4**
Q 11	Discuss where well foundations are more suitable than other types	**10**	**CO3**

SECTION C

Q12	Explain the principles of the design of retaining walls with diagrams.	**20**	**CO4**