Sanjay Ghodawat University, Kolhapur

2020-21

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

EXM/P/09/00

Year and Program: TY – B.Tech	**School of Technology**	**Department: Civil Engg.**
Course Code: CET303 R1	**Course Title: Foundation Engineering**	**Semester : V**
Day :Monday **Date:21/12/2020**	**End Semester Examination**	**Time:2 Hrs.** **Max Marks:50**

Instructions: 1) All Questions are compulsory.
2)Assume suitable data wherever necessary

		Marks	Bloom's Level	CO
Q.1	**Answer the following (any Two)**–			
a)	List methods of explorations and explain any one detail with sketch	8	L1	CO1
b)	Explain modes of bearing capacity failure for soil with neat sketches	8	L2	CO2
c)	A strip footing 2m wide is founded at a depth of 1.2m below GL into soft saturated clay having unit weight 19.5kN/m^3. The soil has undrained shear parameters c = 25kN/m^2 and angle of internal friction $\phi = 0^o$. Determine safe bearing capacity of the foundation. Take N_c = 5.7, N_q = 1 & N_γ=0.Take factor of safety as 2.	8	L4	CO2
Q.2	**Answer the following (any two)** –			
a)	Explain different types of shallow foundation with their suitability and neat sketches.	8	L2	CO3
b)	Explain pile classification with their applications	8	L2	CO3
c)	A group of 9 piles with 3 piles in a row was driven into soft clay extending from ground level to a greater depth. The diameter and length of piles were 30cm and 10m respectively. The cohesive strength of the clay is 35kN/m^2. If the piles were placed 90cm c/c, determine the allowable load on pile group on basis of shear failure criterion for a FOS = 2.5. Take Nc = 9 & α = 1.	8	L4	CO3
Q.3	**Answer the following (any two)** –			
a)	Elaborate cofferdam? Enlist and explain different types of cofferdams with neat sketches.	9	L2	CO4
b)	Draw the cross section of well foundation and name and explain the different parts.	9	L2	CO4

c)	An embankment is constructed in purely cohesive soil having $c=55kN/m^2$ and unit weight $18kN/m^3$. For slope stability analysis a failure arc with following details was selected, radius of slip circle = 15.2m, angle subtended at centre of rotation = 128^o, area of failure wedge = $136m^2$, location of c.g. of failure wedge = 4.2m horizontally away from centre of slip circle. Calculate factor of safety of this trial failure circle.	9	L4	CO4

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