Total No. of Printed Pages:02

SUBJECT CODE NO: H-406
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (Civil)
Foundation Engineering
(REVISED)

[Time: Three Hours]   [Max.Marks:80]

Please check whether you have got the right question paper.
N.B
i) Solve <u>any three</u> questions <u>from each section</u>.
ii) Draw neat Sketches whenever required.
iii) Assume suitable data if necessary and state it clearly

SECTION – A

Q.1	a)	What are the factors that affect the sample disturbance? How are these effect minimised.	07
	b)	Explain various method of drilling holes for subsurface investigations.	06
Q.2	a)	Explain standard penetration test (SPT) in detail.	07
	b)	Discuss cantilever footing in detail.	06
Q.3	a)	Explain limitation of the Plate Load test.	06
	b)	Discuss the consolidation settlement of soil.	07
Q.4	a)	With the help of neat sketches, explain different types of raft foundation.	06

Q.4 b) A square footing has dimensions of $2m \times 2m$ and a depth of 2m. Determine it's ultimate   07
bearing capacity in pure clay with an unconfined strength of 0.15 N/mm^2, $\phi=0^0$ and
$\gamma = 1.7g/cm^3$. Assume Terzaghi's factors for $\phi=0^0$ as $N_c = 5.7, N_q = 1, N_\gamma = 0$.

Q.5   Write short notes on   14

a) Limitation of Terzaghi's theory of B.C.
b) Wash Boring
c) Seismic method of sub soil exploration

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SECTION – B

Q.6 a) Determine the capacity of pile group in a clay of unconfined compressive strength of $q_{ue} = 78 kN/m^2$ the natural water content is $W_n = 35\%$, bulk unit weight of soil = $13\ kN/m^2$. If the pile group has 3 rows and 4 pile in each row with c/c spacing of 0.9m diameter of 250mm of length of 10m assume adhesion factor $\alpha = 1$.   10

    b) What are floating piles   03

Q.7 a) What are the different forces to be consider in the analysis of a well foundation?   06

    b) Describe the various components of a pneumatic caisson with the help of sketch.   07

Q.8 a) Explain different types of cofferdams with neat sketches.   07

    b) What is special about black cotton soil? What techniques are practiced in the design and construction on black cotton soil?   06

Q.9 a) What are sheet piles and sheet pile waiting? Discuss   04

    b) Write a note on pumping and sealing of bottom of cofferdam.   06

    c) What is coffer dam? Name the different types of cofferdam   03

Q.10 Write Short note on
    a) Effect off pile driving on ground   05

    b) What are different various forces acting on well? Explain in detail   05

    c) Under reamed piles   04

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