KATIHAR ENGINEERING COLLEGE, KATIHAR

DEPARTMENT OF CIVIL ENGINEERING

Subject: Foundation Engineering **Maximum Marks:** 05

Time: 40 Minutes **Instructor:** Rashid Mustafa

Test- II

Instruction: Answer any three questions in which question no. 1 is compulsory

Q.1 What do you understand by?

(a) Area Ratio (b) Internal Clearence (c) Outside Clearence (d) Recovery ratio **01**

Q.2 A standard penetration test conducted in a saturated coarse silty soil with saturated unit weight of 1.8 g/cc, at a depth of 5 m has yielded a N- value of 12. Find the corrected value for design of foundation, if the depth of water table at the time of test was 2m. **02**

Q.3 Footing of a wall is 1.2m wide at the base and is located in a homogeneous cohesive soil at a depth 1m below G.L. The soil has $\gamma = 17.6\ \text{kN/m}^3$, $C' = 36\ \text{kN/m}^2$ and $\Phi' = 20^0$. Assuming the soil as soft which is likely to fail under local shear. Determine the safe load which can be taken by footing per metre length of the footing.

For $\Phi' = 20^0$, $N_c = 17$, $N_q = 17$, $N_\gamma = 4.5$

For $\Phi' = 13.6^0$, $N_c = 11$, $N_q = 4$, $N_\gamma = 1.6$ **02**

Q.4 A 8m long pile is used in a deposit of uniform clay having unconfined compressive strength of $100\ \text{kN/m}^2$ and adhesion factor of 0.9. If the pile carry an axial load of 60 kN with a factor of safety of 4. Find the diameter of pile. Take $N_c = 9$ **02**

<END OF THE QUESTION PAPER>

NOTE: Solution of class test-II will be uploaded on the college website **www.keck.ac.in**