**Rajasthan Institute of Engg. & Tech. Jaipur**

**University Roll No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**B. Tech. IV Year VIII Semester (II Mid Term 2017-18)**

**Branch: - CIVIL ENGINEERING SET-A**

**Subject: - ADVANCED FOUNDATION ENGINEERING**

**Time: -2 Hrs. [Maximum Marks: 20]**

**Instruction for students:**

**1. No provision for supplementary answer book.**

**2. Attempt all questions. 3. All question carry equal marks.**

1.Explain Negative skin friction.How do you calculate it for a group of piles in clay.

OR

1. A 12m long concrete pile 400mm dia has been driven into a granular soil having Φ=350,γ=22kN/m3 & γsat=25kN/m3.Depth of water table is 2m below ground surface.Determine safe load carrying capacity of pile when FOS=3,Nq=42.

2.Describe the conditions where a pile foundation is more suitable than a shallow foundation with types of piles. OR

2.Define collapsible soil & methods of identification of collapsible soil.

3.How you can identify expansive soil. Describe different tests for identification.

OR

3.Determine safe load carrying capacity of double under reamed pile of 400 mm dia & 5m length in clayey soil having average cohesion of 70kN/m2.

4. Explain following

a.Sheet pile b. Anchor pile c. under-reamed pile OR

4.A raft foundation of 14mX20m is resting in clay having cu=150kN/m2 & γ =20kN/m3. A loading of 150 kN/m2 is applied at the base of raft.Determine the depth at which raft be placed so as to get a factor of safety of 2.5 against shear.