

## M.E(STRUCTURES)-SEM II

Subject: Elective II (Design of foundations, Human rights and French Language)

Max marks: 50.

Date:

**Instructions:**

- 1) Solve any two questions from Q.1 to Q.3
- 2) Solve any two questions from Q.4 to Q.6
- 3) Questions Q.7 and Q.8 are compulsory.
- 4) Figures to the right indicate full marks
- 5) Assume suitable data if necessary

- Q.1** a) Explain various factors affecting the foundation settlement. (4)
- b) What are the various factors to be considered in deciding the depth of soil exploration and depth of foundation? (4)
- c) Explain the various types of raft foundation. (2)
- Q.2** a) The column layout of a multi-storied building (GF parking+ 4 floors) at foundation level is shown in Fig. 1. Size of all columns is 300mm x 450 mm. The working load on columns is tabulated as below. (6)

Column No.	Working load (kN)
C1, C4	500
C2, C5	600
C3, C6	300

Design the flat slab raft foundation. If the allowable bearing pressure on soil at 3m depth is  $150 \text{ kN/m}^2$ .



Fig. 1: Column Layout

- b) Explain in brief function and classification of piles. (4)
- Q.3** a) Describe soil structure interaction and membrane analysis for shell foundations. (4)

- b) Explain with neat sketch how to calculate the bearing resistance and skin resistance capacity of pile foundations. (4)
- c) Write a short note on “IS recommendation for structural design of piles” (2)
- Q.4 a) Explain the objectives of human rights (3)
- b) Explain the impact of duties discharged towards society (3)
- c) Explain any four articles stated in United National council (4)
- Q.5 a) Write a note on” Role of non-government organizations in promotion of human rights” (3)
- b) Explain the Right to Information Act (3)
- c) Write a note on “Prisons and human rights” (4)
- Q.6 a) Write a note on” Initiative by Government of India for right to education” (3)
- b) What do you understand by Freedom of Expression (3)
- c) Give an account of any two human rights violations you must have heard of. (4)
- Q.7 a) Answer any two in French: (2)
- i) Monday 1<sup>st</sup> July    ii) Saturday 11<sup>th</sup> August    iii) Sunday 21<sup>st</sup> February
- b) Conjugate: Answer any two (2)
- i) Je.....(AXOIR) un stylo (positive)
- ii) Elles.....(APPRENDRE) en anglais(positive)
- iii) Nous.....(TRAVAILLER) (Negative)
- c) Comment allez-vous? (1)
- Q.8 a) Translate any two from French to English (2)
- i) ce sont des livres
- ii) Elle est une chanteuse
- iii) Vons vous appelez comment?
- b) Translate any two from English to French (2)
- i) You are a writer, Paul!
- ii) Welcome to Pune- to India.
- iii) And he, he is an Indian scientist.
- c) Qui est M. Sachin Tendulkar? (1)