

**13045 : Construction Methods in Geotechnical Engineering : 1 SFGE 4**

P. Pages : 1

Time : Three Hours



**AX - 3645**

Max. Marks : 80

- Notes :
1. All question carry equal marks.
  2. Due credit will be given to neatness and adequate dimensions.
  3. Assume suitable data wherever necessary.
  4. Illustrate your answer necessary with the help of neat sketches.
  5. Use of pen Blue/Black ink/refill only for writing the answer book.
  6. Attempt **any five** questions out of six.

1. Attempt **any two**.
  - a) What are the advantages and disadvantages of cast in situ piles. 8
  - b) Explain with neat sketch and construction procedure of raft foundation. 8
  - c) Describe the accessory equipment for pile driving in detail. 8
2. Attempt **any two**.
  - a) Explain in detail the factors affecting effectiveness of a vibratory driver. 8
  - b) State different types of hammer used in pile driving. Explain the factors affecting efficiency of pile. 8
  - c) Explain construction of raft foundation with neat sketch. 8
3. Attempt **any two**.
  - a) Discuss in detail a sheet piling for retaining excavation. Explain its suitability. 8
  - b) What is pre-dredging? Explain dredging with clamshell bucket. 8
  - c) Briefly explain the procedure adopted in well sinking and bring out problems that are encountered in open sinking. 8
4. Attempt **any two**.
  - a) Explain Smooth, Pre-splitting, cushion blasting with suitability and advantages. 8
  - b) Explain with neat sketches a different type of circuits for firing explosives. 8
  - c) Explain in detail various criteria for blast design. 8
5. Attempt **any two**.
  - a) Explain common type of loading and hauling equipment in detail. 8
  - b) How does tunneling in soft soil differ from tunneling in rock? on what basis tunneling method are decided? 8
  - c) Discuss in detail, the essential components of tunnel-boring machines. 8
6. Attempt **any two**.
  - a) Explain different types of high explosives for blasting. 8
  - b) Explain different methods of loading blastholes with explosives. 8
  - c) What type of shield tunneling equipment should be used in clay, silt and sandy types of soils? 8

\*\*\*\*\*

