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Total No. of Questions : 5]

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**B.E. VIIIth Semester (CGPA)
Examination, 2017**

EF-346

CIVIL ENGG.

(Geotechnical Engg.-II)

Paper : CE-801

Time : 3 Hours]

[Maximum Marks : 60

Note :- Attempt all the questions. There is internal choice in each question.

1. (a) What is general shear and local shear failures of soil ? How it effects the calculation of bearing capacity of soils ?
- (b) What are various assumptions and limitations of Terzaghi's theory for bearing capacity equations ? Explain its each term and explain method of obtaining them.

Or

- (a) Explain limits of total and differential settlements as per I. S. Code.
 - (b) Describe plate load Test with neat sketch.
2. (a) What are various types of piles ? Explain their uses with neat sketches.
- (b) How pile load test is carried out ? Explain method of obtaining safe load with neat sketch.

Or

- (a) What are tilts and shifts in well foundation and how to measure and correct the same if the well is not vertical ?
 - (b) Give classification of Caisson foundations. Sketch a open well foundation and list out its various components. Mark scour depth foundation level and well cap level in the same sketch.
3. (a) Describe factors effecting compaction of soil.
- (b) Explain how field compaction is carried out for cohesive and noncohesive soils.

Or

- (a) What is stabilization ? How it differs with compaction. Explain Mechanical method of stabilization with neat diagram.
 - (b) What are geosynthics materials ? What are their functions ?
4. (a) Why is it necessary to explore soils at site ? In short explain the planning for exploration and investigations needed.
- (b) Explain disturbed and undisturbed soil sample. How are they collected ? Categorise various test to be carried on these type of samples.

Or

- (a) Explain expansive and nonexpansive soils. How to handle foundation problem with expansive soil ?
- (b) What is CNS layer ? Explain its use and method of laying the same.

5. (a) What are cofferdams ? What are its various types and use ?
- (b) Explain natural frequency of a system and its use. Explain also various mode of vibrations.

Or

- (a) What are the precautions needed for design of machine foundations ? How the design differs from building foundations of the same weight ?
- (b) Give necessary steps for designing a black foundation for impact type of machine foundation.