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**CODE NO:- Z-103**  
**FACULTY OF ENGINEERING**  
**B.E (Civil) Year Examination - June – 2015**  
**Foundation Engineering**  
**(Revised)**

[Time: Three Hours]

[Max. Marks:80]

“Please check whether you have got the right question paper.”

- i) Q. no 1 and Q. no 6 are compulsory.
- ii) Solve any two questions from remaining Questions from section A and section B each
- iii) Assume suitable data wherever necessary and state it clearly.

**SECTION-A**

- |                  |  |    |
|------------------|--|----|
| Q.1              | a) What are the objectives of site investigation's in soil exploration program.  | 05 |
|                  | b) State the formula used in determining bearing capacity from field test using N-values and qc values.  | 05 |
| Q.2              | a) Write neat sketches, explain open excavation methods of soil exploration  | 08 |
|                  | b) Explain the effect of eccentric loading on bearing capacity of soil.  | 07 |
| Q.3              | a) Design a R.C.C footing for a 1m wide concrete wall carrying a load of 800 KN/m. The allowable soil pressure is 200 KN/M <sup>2</sup> .  | 07 |
|                  | b) What do you understand by failure mechanism in soil? Explain modes of shear failure for shallow foundation.   | 08 |
| Q.4              | a) Explain electrical resistivity method of geophysical investigation along with its limitations.  | 08 |
|                  | b) Explain standard penetration test (SPT) in detail.  | 07 |
| Q.5              | a) Write a note on proportioning of footing for equal settlement.  | 08 |
|                  | b) What is floating foundation? What are its advantages and limitations?   | 07 |
| <b>SECTION-B</b> |  |    |
| Q.6              | Design a friction pile group to carry a load of 4500 kn including the weight of cap. The soil is uniform clay up to a 10 depth of 24m underlain by rock. The average unconfined compression strength of clay is 80 kN/m <sup>2</sup> |    |
| Q.7              | a) Explain in brief the effect of pile driving   | 07 |
|                  | b) What is tilt and shift of a well? How it is rectified.  | 08 |
| Q.8              | a) Explain various types of cofferdams with neat sketches.   | 08 |
|                  | b) What are the characteristics of black cotton soil and how they affect the foundation resting on it.   | 07 |
| Q.9              | a) What safety measures are required for caissons? Discuss.  | 07 |
|                  | b) Explain the construction of cellular cofferdams   | 08 |
| Q.10             | a) Explain in detail pile load test  | 08 |
|                  | b) Write a note on caisson disease.  | 07 |