

Total No. of Questions : 4]

SEAT No. :

**P8458**

[Total No. of Pages : 1

**Oct-22/BE/Insem-27**  
**B.E. (Civil Engineering)**  
**FOUNDATION ENGINEERING**  
**(2019 Pattern) (Semester - VII) (401001)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) *Answer Q1 or Q2, Q3 or Q4.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary and mention it clearly.*
- 5) *Use of non-programmable calculator is allowed.*

- Q1)** a) Explain the purpose of soil exploration (any 5). [5]  
b) Describe Standard Penetration test. [5]  
c) The inner diameters of sampling tube and that of cutting edge are 72 mm and 70 mm respectively. Their outer diameters are 74 mm and 76 mm respectively. Determine the inside clearance, outside clearance and area ratio of sampler. Comment on suitability of sampler. [5]

OR

- Q2)** a) Discuss IS Criteria for depth of bore holes in subsurface investigations. [5]  
b) Discuss pressure metertest with a neat sketch. [5]  
c) Explain in detail 'Seismic refraction method'. [5]

- Q3)** a) Define the terms : [5]  
i) Ultimate bearing capacity  
ii) Net ultimate bearing capacity  
iii) Net safe bearing capacity  
iv) Gross safe bearing capacity  
v) Allowable soil pressure  
b) Discuss the modes of shear failure. [5]  
c) Plate load test was conducted on a square plate of size 0.3 m in clay. The settlement observed was 4 mm. Determine the settlement of square footing of size 2 m under the same load intensity. [5]

OR

- Q4)** a) Describe Meyerhof's bearing capacity theory. [5]  
b) Explain Terzaghi's bearing capacity equation for strip, rectangular and circular footing with meaning of all terms. [5]  
c) Explain the effect of water table on bearing capacity. [5]

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