



6. a) Explain pressure Bulb. 4  
 b) Define : 6  
 i) Total settlement.  
 ii) Differential settlement.  
 iii) Tolerable settlement.

### UNIT - III

7. a) Explain floating foundation. 4  
 b) Explain design steps of Trapezoidal combined footing. 6
8. A square footing is required to carry a net load of 1200KN. Determine the size of the footing if the depth of Foundation is 2.0 m and tolerable settlement is 40 mm. The soil is sandy with  $N = 12$ ,  $F.S = 3$ , and the water table is very deep. Use Teng's equations. 10
9. Explain : 10  
 i) Grillage foundation.  
 ii) Minimum Depth of foundation.

### UNIT - IV

10. Classify the piles depends on their used, materials. 10
11. Find the safe design load on a pile given that the weight of the hammer is 2 T (tonnes) and penetration of pile under the last blow of hammer is 3.5 mm. The height of the drop hammer is 2.5 cm. Used Engineering News formula. 10
12. Write down characteristics of B.C. soil and required precautions for construction in block cotton (B.C) soil in details. 10

### UNIT - V

13. a) Write down : 10  
 i) Pneumatic cassion.  
 ii) Sand Island method.
14. Briefly discuss the techniques of well sinking in relation to the well foundations with neat sketches. 10
15. a) Discuss the use of single degree freedom system in the analysis of machine foundations ? What are its limitations. 6  
 b) Resonance occurs at a frequency of 20CPS in a vertical vibration of a test block (1m x 1m x 1m) Calculate the coefficient of Elastic Uniform compression ( $C_u$ ). The Weight of the oscillator was 500 N. 4

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