

Total No. of Questions : 10]

SEAT No. :

**P3662**

**[4959]-1017**

[Total No. of Pages : 2

**B.E.(Civil)**

**ADVANCED FOUNDATION ENGINEERING**

**(2012 Pattern) (Elective-III)(End Semester) (Semester-II)(401009B)**

*Time :2½Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Solve Q1 or Q2,Q3or Q4, Q5 or Q6 , Q 7 or Q 8, Q 9 or Q10.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator is allowed.*
- 5) *Assume suitable data if necessary.*

**Q1)** a) Explain how you will plan the subsoil investigations for offshore structures. **[5]**

b) Write a short note on Design of piles subjected to tensile load. **[5]**

OR

**Q2)** a) Explain the friction piles and bearing piles with suitable sketches. **[5]**

b) Explain in brief any one case history of failure of foundations. **[5]**

**Q3)** a) What are the design guidelines for construction of stone columns? Explain in brief. **[5]**

b) Explain the seismic refraction method with a suitable sketch. **[5]**

OR

**Q4)** a) Draw a neat sketch of sand drain and explain any five design guidelines. **[5]**

b) How the design of piles subjected to lateral loads is carried out? Explain in steps. **[5]**

**Q5)** a) What are the components of total settlement of a footing in a clay. Explain how they are estimated. **[8]**

b) What are the TS code provisions for design of raft foundation. **[8]**

OR

**Q6)** a) Explain the conventional method for design of raft foundations. State the basic assumptions of this method. **[8]**

b) Write the equations proposed by Terzaghi for estimations of safe bearing pressure for strip, square, circular and rectangular footing. **[8]**

**P.T.O.**

- Q7)** a) Draw a neat sketch of well foundation and explain the design guidelines as per IS provisions. [8]  
b) Draw a neat sketch of rockfill dam and explain various components of rockfill dam. [8]

OR

- Q8)** a) Explain the forces acting on well foundation. Also state the assumptions made in the analysis of well-foundation. [8]  
b) What are the various types of cofferdam? Explain any one in detail. [8]  
**Q9)** a) Explain the various types of conduits used with suitable sketches. [9]  
b) Explain how vertical load on ditch conduit is estimated. [9]

OR

- Q10)** a) Explain the positive projecting conduits and negative projecting conduits with suitable sketches. [9]  
b) Write a short note on “Imperfect ditch conduit. [9]

