

B. CONSTRUCTION ENGG. FINAL EXAMINATION, 2008
(2nd Semester)

UNDERGROUND CONSTRUCTION

Time : Three hours

Full Marks : 100
(50 marks for each part)

Use a separate Answer-Script for each part.

PART-I

Answer any **two** questions.

1. Find the depth of embedment below the dredge line and anchor rod force for the sheet pile shown in figure – 1. Use a 30% increase applied to the computed embedment length. 25

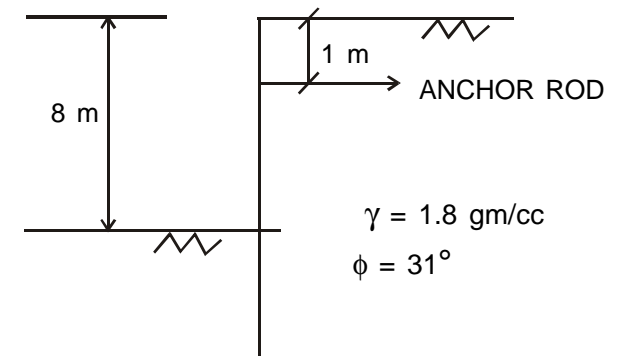


Fig. 1

(2)

2. Write short notes on :
- i) Dewatering by SUMPS. 10
 - ii) Ground settlement in sandy strata. 15
3. a) State the different factors on which the cost of a dewatering project depends. 4
- b) Draw a sketch showing typical connection details of shut pile, waling, anchor rod etc. 6
- c) Briefly discuss the construction sequence of shut pile walls. 5
- d) Write a short note on cellular cofferdams. 10

PART-II

Answer any **two** questions.

4. a) A braced excavation is to be made in a subsoil as given in Fig. -2 having 12 m width and 8.0 m deep check the stability of cut against base failure bottom Heave and clay bursting. 17

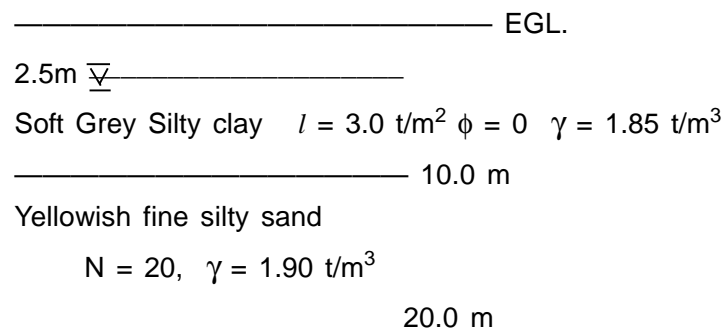


Fig. 2

(3)

- b) Briefly describe the type of earth pressure variation in braced cut. 8
5. Write notes on following : 5×5=25
- a) Ditch Conduct
 - b) Negative Projecting Conduct
 - c) Bottom Heave
 - d) Diaphragm Wall
 - e) Shutting and Lagging
6. a) Explain the advantages of arching phenomenon. 7
- b) Differentiate the shallow and deep tunnel. 8
- c) Describe the factor on which adjoining ground settlement is dependent in deep excavation. 10

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