



CE 3004

**III Semester B.Tech. in Civil Engineering Examination, August 2011
SURVEYING - I**

Time : 3 Hours

Max. Marks : 75

Instruction: Answer any five questions from Part - A, and Part - B.

PART - A

I. Answer any five questions : (5×5=25)

- 1) Write the classification of surveying.
- 2) Explain different obstacles in chain surveying.
- 3) Explain the radiation method of plane tabling.
- 4) Explain the term strength of fix in case of plane tabling.
- 5) Write the classification of leveling.
- 6) Explain the function of leveling staff.
- 7) Write the characteristics of contours.
- 8) Write a short note on horizontal curves.

PART - B

II. Answer any five questions : (5×10=50)

- 9) Describe the procedure to carry out the base line survey in chain surveying.
- 10) Define two point problems in plane table and explain how to solve it.
- 11) What are the precautions to be adopted in using the Compass ? Explain.
- 12) In levelling between two points A and B on opposite banks of a river, the level was set up near A and the staff readings on A and B were 1.60 m and 2.44 m respectively. The level was then moved and set up near B, and the respective readings on A and B were 0.70 and 1.26. Find the true difference of level between A and B.
- 13) Explain profile levelling with suitable example.
- 14) Name the methods of traverse carried out using vernier theodolite and explain any one method in detail.
- 15) Explain the various errors involved in theodolite survey.
- 16) List instruments required for mine surveying and explain the surveying of tunnels.

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Answer the following questions in the space provided.

PART A

(10-10)

1. A solution is prepared by dissolving 10.0 g of NaCl in 100.0 g of water. Calculate the molality of the solution.
2. Calculate the molarity of a 10.0% (w/w) NaCl solution.
3. Calculate the mole fraction of NaCl in a 10.0% (w/w) NaCl solution.
4. Calculate the boiling point of a 10.0% (w/w) NaCl solution.
5. Calculate the freezing point of a 10.0% (w/w) NaCl solution.
6. Calculate the vapor pressure of a 10.0% (w/w) NaCl solution.
7. Calculate the density of a 10.0% (w/w) NaCl solution.

PART B

(10-10)

8. A solution is prepared by dissolving 10.0 g of NaCl in 100.0 g of water. Calculate the molality of the solution.
9. Calculate the molarity of a 10.0% (w/w) NaCl solution.
10. Calculate the mole fraction of NaCl in a 10.0% (w/w) NaCl solution.
11. Calculate the boiling point of a 10.0% (w/w) NaCl solution.
12. Calculate the freezing point of a 10.0% (w/w) NaCl solution.
13. Calculate the vapor pressure of a 10.0% (w/w) NaCl solution.
14. Calculate the density of a 10.0% (w/w) NaCl solution.
15. Explain the effect of temperature on the solubility of a solid in a liquid.
16. Explain the effect of temperature on the solubility of a gas in a liquid.
17. Explain the effect of temperature on the rate of a chemical reaction.
18. Explain the effect of temperature on the equilibrium constant of a chemical reaction.