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Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 15705

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2012.

Third Semester

Civil Engineering

CE 37 — SURVEINNG I

(Regulation 2008)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the classifications of surveying based upon the nature of the field surveying?

2. Enumerate different types of instrument used to set out a right angle to a chain line.

3. What do you mean by magnetic bearing?

4. List out the operations needed in plane table surveying.

5. What are the components of leveling instrument?

6. Define contour and contour integral.

7. What are the different errors in theodolite work?

8. Write down the principle of vernier.

9. Distinguish between compound curve and reverse curve.

10. Write down the advantages of shafts in tunneling.

PART B — (5 × 16 = 80 marks)

11. (a) Explain how will you continue chaining past the following obstacles

(i) Apond (4)

(ii) A river (4)

(iii) A hill (4)

(iv) A tall building (4)

Or

(b) In passing an obstacle in the form of a pond, station A and D. on the main line, were taken on the opposite side of the pond on the left of ad, a line AB, 200m long was laid down and a second line AC, 250m long was ranged on the right of AD, the points B, D and C being in the same straight line. BD and DC were then chained and found to be 125m and 150m respectively. Find the length of AD.

12. (a) Explain the prismatic compass and surveyor's compass in a tabular form.

Or

(b) Explain with sketches, the following methods of locating a point by plane table survey also discuss the merits and demerits of the following:

(i) Radiation (6)

(ii) Intersection (5)

(iii) Resection (5)

13. (a) What are the different sources of errors in leveling? How are they eliminated?

Or

(b) A luminous object on the top of the hill is visible just above the horizon at a certain station at the sea level. The distance of the top of the hill from the station is 40km. find the height of the hill, taking the radius of the earth to be 6370km.

14. (a) (i) Describe the temporary adjustments for a Theodolite surveying. (8)

(ii) How will you set out a horizontal angle by method of repetition? (8)

Or

(b) Explain various methods of traversing. What is error of closure?

15. (a) Determine the of set to be set out at chain interval along the tangents, to locate a 16 chains curve, the length of each chain being 20m

Or

(b) Describe the following

(i) Setting out by offset and angles (4)

(ii) Transition curves and vertical curves (4)

(iii) Mine surveying (4)

(iv) Shafts in tunnels. (4)