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Register Number:

Name of the Candidate:

B.Sc. DEGREE EXAMINATION December 2014

(CONSTRUCTION MANAGEMENT)

(THIRD SEMESTER)

330: SURVEYING

Time: Three hours

Maximum: 75 marks

Answer ONE FULL question from each UNIT

(5 × 15 = 75)

UNIT-I

1. a) Explain the principle and Chain Surveying? (6)
b) In passing an obstacle in the form of a pond, stations A and D, on the main line, were taken on the opposite sides of the pond. On the left of AD, a line AB 225 m long was laid down, and a second line AC 275m 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 125 m and 137.5 m respectively. Find the length of AD. (9)

(OR)

2. a) Explain the following terms: (i) Check line, (ii) Base line (iii) Tie line (6)
b) Describe how you would range a chain line between two points which are not inter-visible. (9)

UNIT-II

3. a) Explain the various methods of plane tabling? (6)
b) Explain clearly the differences between a prismatic compass and surveyor's compass. (9)

(OR)

4. a) Define the terms (i) Benchmark (ii) Parallax (iii) Reduced level (3)
b) The following staff reading were observed successively with level, the instrument having been moved forward after the second, fourth and eighth readings: 0.875, 1.235, 2.310, 1.385, 2.930, 3.125, 3.975, 0.120, 1.875, 20.30, 3.765. The first reading was taken with the staff held upon a bench mark of elevation 132.135. Enter the readings in level book form and reduce the levels. Apply the usual checks. Find also the difference in level between the first and the last points. (12)

UNIT-III

5. The following offsets were taken from a chain line to a hedge. (15)

| | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (m) | 0 | 6 | 12 | 18 | 24 | 36 | 48 | 60 | 72 | 81 | 90 |
| Offset (m) | 3.60 | 3.00 | 2.40 | 1.80 | 1.20 | 1.50 | 2.10 | 2.40 | 3.00 | 3.30 | 3.90 |

Calculate the area enclosed between the chain line, hedge and the end offsets by (i) Simson's rule (ii) Trapezoidal rule.

(OR)

6. The area within the contour lines at the site of a reservoir and the face of the proposed dam are as follows: (15)

| Contour in m | Area in m ² |
|--------------|------------------------|
| 450 | 270 |
| 452 | 10,400 |
| 454 | 75,600 |
| 456 | 1,44,000 |
| 458 | 2,70,000 |
| 460 | 4,14,500 |
| 462 | 4,60,800 |
| 464 | 5,86,800 |
| 466 | 6,39,900 |

Taking 450 as the bottom level of the reservoir and 466 as the water level, find the volume of water in the reservoir.

UNIT-IV

7. a) How do you adjust the closed error in a theodolite traverse? Explain in detail. (6)

- b) Explain with neat sketches to set out tangential curves by theodolite. (9)

(OR)

8. a) How do you determine the tachometric constants? (6)

- b) Compare and contrast the tangential and stadia system of tachometry? (9)

UNIT-V

9. a) Explain in detail about the some mine survey instruments? (6)

- b) Differentiate between plane surveying and geodetic surveying and write down the basic characteristics of each? (9)

(OR)

10. a) What are the various software's available of GIS? (6)

- b) Explain in detail about the various principles of 'Distometer' and 'GPS'? (9)
