

9. (a) Explain in details the characteristics of a transition curve
(b) Write down the classification of circular curves. 15

Roll No. _____

3029
B. Tech (Civil Engg.) 3rd Semester
Examination – February, 2022

SURVEYING

Paper : PCC-CE-207-C

Time : Three hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 is compulsory. Attempt five questions in all taking one question from each Section. All question carry equal marks.

1. Explain the following : 3 × 5 = 15
- (a) Reciprocal Levelling
 - (b) Differentiate Prismatic and Surveyor's Compass
 - (c) Principle of Chaining
 - (d) Transiting and Swinging of telescope
 - (e) Draw and name the components of a transition curve

SECTION - A

2. (a) At the end of a survey work, a 20 m chain was found to be 6 cm too long. The area of the plan drawn with the measurements taken with this chain is 122 cm² and the scale adopted was 2 m to 1 cm. What is the true area of the field, if the chain was exactly 20 m long at the commencement of the work? $5 + 10 = 15$
- (b) Describe the various obstacles in chaining.

3. The following are the bearings of the lines of an open traverse ABCDE; correct them where necessary for local attraction: 15

Line	F.B.	B.B.
AB	154°00'	334°40'
BC	205°40'	23°38'
CD	140°00'	321°22'
DE	69°38'	249°38'

SECTION - B

4. The following consecutive readings were taken with the help of a Dumpy level: 15
- 2.905, 3.655, 3.910, 4.025, 1.265, 2.700, 0.595, 1.960, 2.545, 2.010, 3.945, 2.110, 3.445, 3.990, 1.665, 2.885.

The instrument was shifted after the fourth, seventh and eleventh readings. The first reading was taken on the staff held on the B.M. of R.L. 100.000 m. Calculate the R.L.s of the points and apply the arithmetic check.

3029-1800-(P-4)/(Q-9)/(22)

(2)

5. Explain Curvature and Refraction. Calculate the errors occur due to curvature and refraction. And describe the combined correction for both of the errors. 15

SECTION - C

6. (a) Explain the methods of contouring in details.

$10 + 5 = 15$

- (b) Explain the Traversing method of plane table surveying.

7. Explain traversing with a Theodolite and describe various methods of traversing in details. 15

SECTION - D

8. A staff was held vertically at distance of 100 m and 300 m from the centre of a theodolite fitted with stadia hairs and the staff intercept with the telescope horizontal were 0.990 and 3.000 respectively. The instrument was then set over a station A of R.L. 950.50 m, and the height of the instrument was 1.42. The hair readings on a staff held vertically at station B were 1.00, 1.83 and 2.67 while the vertical angle was 10°00'. Find the distance between A and B, and R.L. of B. 15

3029-1800-(P-4)/(Q-9)/(22)

(3)

P. T. O.