

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2021

B.Tech III Semester

COURSE CODE: 18B11CE312/10B11CE412

MAX. MARKS: 35

COURSE NAME: Surveying

COURSE CREDITS: 03

MAX. TIME: 2 HRS

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Assume suitable data if required. Notation has its usual meaning.*

**Q1. Answer the following in brief:**

- (a) Classify surveying on the basis of instruments used and name all the equipments necessary for field work involving in each of them. [1]
- (b) The distance between two points, measured with a 20 m chain, was recorded as 327 m. it was afterwards found that the chain was 3 cm too long. What was the true distance between the points? [1]
- (c) Differentiate between Quadrantal bearing system and whole circle bearing system. [1]
- (d) The following are the observed forebearing of the lines  
 (i) AB  $12^\circ 24'$     (ii) BC  $56^\circ 54'$     (iii) CD  $266^\circ 30'$     (iv) DA  $354^\circ 2'$   
 Find their back bearing. [2]

- Q2. (a) Define the term Point of curve, point of tangency, point of intersection, long chord, mod ordinate, and tangent distance of a circular curve. [3]
- (b) Calculate the ordinate at 10 m distance for a circular curve having a long chord of 80 m and mid ordinate of 4 m. [2]

- Q3. Explain the Principle of plane tabling. If an object is inaccessible and you want to do the plane tabling operation, which method you will prefer? Explain the procedure with neat sketch. [5]

- Q4. The following staff readings were observed successively with a level. Enter the above readings in a page of a level book and calculate the R L of points if the first reading was taken with a staff held at the bench mark with RL=100 m. [4]

2.5    3.2    1.5    2.90    1.75    0.5    2.65    2.35    meters

- Q5. A tacheometer was set up at an intermediate station C of the line AB and following readings were obtained:

| Staff Station | Vertical angle | Staff readings |       |       |
|---------------|----------------|----------------|-------|-------|
| A             | $-6^\circ 20'$ | 0.445          | 1.675 | 2.905 |
| B             | $4^\circ 20'$  | 0.950          | 1.880 | 2.810 |

The instrument was fitted with an anallatic lens and the constant was 100. Find the gradient on the line joining station A and station B.

Q6. Write short notes on the following:

[6]

- (a) Atmospheric window
- (b) Characteristics of contours

[6]

Q7. Explain different methods of tangential method of tacheometry. Compare with fixed hair method of Tacheometry.

[4]

UNIT TEST 3 EXAMINATIONS DEC 2022