

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2023

B.Tech-III Semester (CE)

COURSE CODE (CREDITS):18B11CE312 (3)

MAX. MARKS: 25

COURSE NAME: SURVEYING

COURSE INSTRUCTORS: Ashish Kumar

MAX. TIME: 1 Hour 30 Minutes

*Note: (a) All questions are compulsory.*

*(b) Marks are indicated against each question in square brackets.*

*(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems*

Q1. Answer the following briefly.

- (a) Differentiate between BS, FS and IS in levelling. [CO2] [1.5]  
 (b) The following readings were taken with a level and a 4 m levelling staff. The level was shifted after 4 and 7<sup>th</sup> reading. Calculate the RL of each point. Take RL of point P as 100 m

1.55 (on P)	1.545	2.35	3.15	3.85	1.45
2.55	2.855	3.455	0.585	1.15	

Make entries in a level book and apply the usual checks. [CO4] [4]

Q2. Explain the principle of equalizing back sight and foresight. [CO2] [2]

- Q3. (a) Why reciprocal levelling is done? What errors eliminate during this levelling operation? [CO1] [1.5]  
 (b) Reciprocal levelling was conducted across a wide river to determine the difference in level of points A and B, A situated on one bank of the river and B situated on the other. The following results on the staff held vertically at A and B from level stations 1 and 2, respectively, were obtained. The level station 1 was near to A and station 2 was near to B.

Level at	Reading on	
	A	B
1	1.575	1.725
2	1.290	1.415

- Calculate the true difference of elevation between point A and B. [CO4] [3]  
 Q4. A Survey Line BAC crosses a river, A and C being on the near and opposite banks respectively. A perpendicular AD, 40 m long, is set out at A. if the bearings of AD and DC are  $48^\circ 30'$  and  $288^\circ 30'$  respectively, draw the sketch and find the bearings of the chain line BAC and also the chainage of C when that of A is 207.8 m. [CO1] [4]

Q5. Explain different characteristics of contour lines. [CO2] [4]

Q6. The following are the bearing observed in traversing, with a compass. Calculate the interior angles of the traverse. [CO1] [5]

Line	FB	BB
AB	194° 15'	14° 15'
BC	40° 45'	220° 45'
CD	20° 30'	200° 30'
DE	242° 45'	62° 45'
EA	330° 15'	150° 15'