JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT TEST -2 EXAMINATIONS-2022

B.Tech-III Semester (Civil)

COURSE CODE (CREDITS): 18B11CE312(3)

MAX. MARKS: 25

COURSE NAME: SURVEYING

COURSE INSTRUCTORS: Dr. Ashish Kumar

MAX. TIME: 1 Hour and 30 Minutes

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

Q1. Answer the following briefly. [CO2]

(a) Instrument used for chain survey.

[0.5]

(b) Number of offsets required if road crosses chainline obliquely.

[0.5]

(c) Operation of fly leveling.

[1]

(d) Interpretation of the statement that "FB and BB of a line is not equal to 180".

[1]

(e) What is horizontal equivalent? Why horizontal equivalent is not constant in contouring?

[1]

(f) The FB bearing of a line AB is S 45° 30' E. What will be back bearing of line?

[1]

Q2. From a topographic map, the areas enclosed by contour lines for a proposed dam are given below. Find the capacity of reservoir. [CO3]

Contours (n		Area enclosed (hectares)
500		20
505		100
510	and a second	400
515		900
520		1100

- Q3. A 20 m chain was found to be 15 cm too long after chaining a distance of 1600 m. it was found to be 30 cm too long at the end of day's work after chaining a total distance of 3200 m. Determine the correct distance if the chain was correct before the commencement of the work. [CO6]
- Q4. How can you use a contour map to get the inter-visibility between two survey stations? Explain the procedure with neat sketch. [CO1]
- Q5. The following staff readings were observed successively with a level, the instrument having been moved after fourth and eighth reading:

2.25, 1.65, 1.85, 2.90, 1.85, 1.20, 0.65, 2.75, 1.55, 2.80 meters.

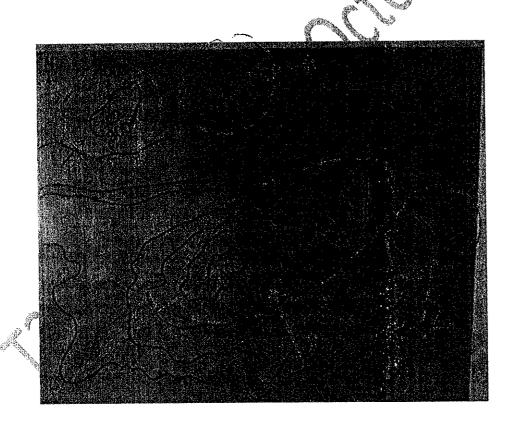
Enter the above readings in a page of a level book and calculate the R L of points if the first reading was taken with a staff held at the bench mark of 100 m. [CO4] [4]

Q6. 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	В
1 2	1.485 1.190	1.725 1.415

(a) If the reduced level of B is 55.18 m above the datum, what is the reduced level of A? [CO4] [2] (b) Assuming that the atmospheric conditions remain unchanged during the two sets of the observations, calculate the combined curvature and refraction correction if the distance AB is 315 m. [CO6] [2]

Q7. Below down is the contour map highlighted with points A, B, C D and E. Explain these features. [CO1]



[3]