JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION-2023

B.Tech-III Semester (CS/IT/ECE/Civil/BT)

COURSE CODE (CREDITS): 18B11CE312(3)   MAX. MARKS: 35

COURSE NAME: SURVEYING

COURSE INSTRUCTORS: DR. Ashish Kumar   MAX. TIME: 2 Hours

Note: All questions are compulsory. Marks are indicated against each question in square brackets. Assume suitable data if required. Notation has its usual meaning.

Q1. Explain the following briefly. [CO2]   **[5]**
   a. There is two method of tacheometry Fixed hair and Movable hair method. Which method you will prefer to use and why?   **[1]**
   b. You are conducting levelling operation. If river comes in between what operation you will perform?   **[1]**
   c. What is orientation in plane tabling? Why it is done ?   **[2]**
   d. Define the term degree of curve.   **[1]**

Q2. (a) Define the sensitiveness of level tube. [CO4]   **[1]**
   (b) During a construction work, bottom of a RC Beam A was taken as a temporary BM (RL = 65.50). The following notes were recorded.
   Reading on inverted staff on BM (A)   2.535 m
   Reading on peg P on ground   1.345 m
   Change on instrument
   Reading on peg P on ground   1.328 m
   Reading on inverted staff on bottom of cornice B 2.225 m

   Enter the reading in a level book page and calculate the RL of cornice B.   [CO4]   **[2]**

Q3. (a) Explain the Tangential method of tacheometry. [CO4]   **[2]**
   (b) In order to find out the RL of point A, Theodolite was set at A. The following observation was taken while keeping the staff at BM (RL = 100m). The height of the instrument axis is 1.5 m. Calculate the horizontal distance between point A and BM and also Calculate RL of point A. [CO4]   **[4]**

Inst Station	Staff Station	Target	Staff Reading	Vertical Angle
A	BM	Lower	1.20	5°30'
		Upper	2.50	7°30'

Q4. What is the principle of plane tabling? Differentiate between method of radiation and Intersection. Explain the method with a neat sketch? [CO1]   **[1+4]**

Q5. Two tangents intersect at a chainage of 1630 m. Design the curve by the method "offsets from the chord produced". Take the deflection angle as 60 degree. Radius of curve is 200 m and Peg interval is 30 m. Draw the diagram also. [CO2]   **[6]**

Q6. What are the basic components of a remote sensing system? Explain various process involved in Remote sensing with a neat diagram. [CO5] **[1+4]**

Q7. From a topographical map, the area enclosed within the contour lines and along the face of the proposed dam are as given below. Find out the volume of the reservoir. [CO3] **[3]**

Contour (m)	300	295	290	285	280	275	270	265	260 (bottom
Area (m²)	29750	26850	21050	18500	13500	8700	5200	750	50

Q8. Draw the section along the line AB of the following Countor map as shown in Fig 1. Write Roll No. on the sheet and attach it with the answer sheet. [CO1] **[2]**
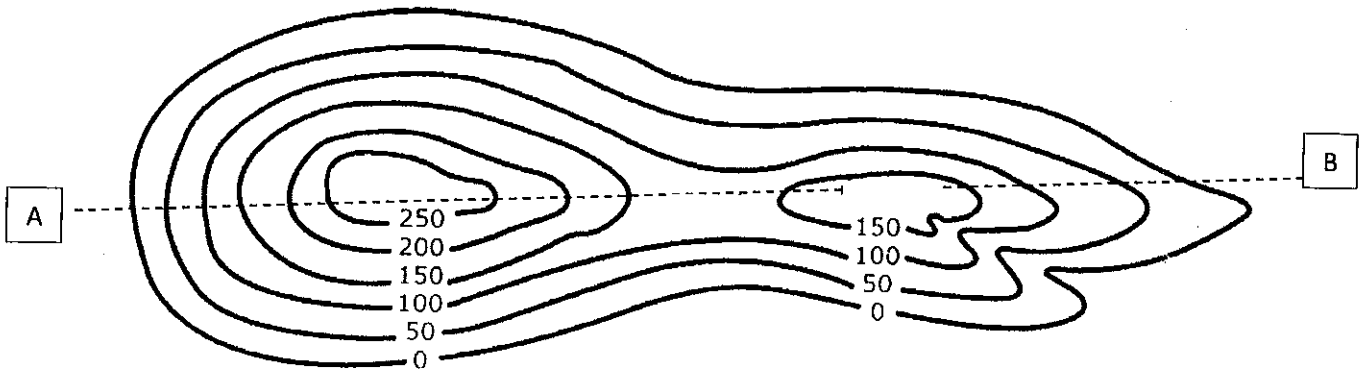
Figure 1