

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: B.TECH
BRANCH: CIVIL ENGINEERING**

**SEMESTER : IV/ADD
SESSION : SP/2025**

SUBJECT: CE208 SURVEYING

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) The following bearings were observed with a compass. Calculate the interior angles. [5] CO 1 BL 3

Line	Fore Bearing
AB	60° 30'
BC	122° 0'
CD	46° 0'
DE	205° 30'
EA	300° 0'

- Q.1(b) Describe relative merits and application of “intersection method” of plane table surveying. [5] CO 1 BL 2

- Q.2(a) The following readings were successively taken with an instrument in levelling work: [5] CO 2 BL 3
0.32, 0.53, 0.62, 1.78, 1.91, 2.35, 1.75, 0.35, 0.69, 1.24 and 0.98 m.

The position of the instrument was changed after 3rd, 7th, and 9th readings. Draw out the form of a level book and enter the above readings properly. Assume the RL of the 1st point as 81.53 m. Calculate RL of all points and apply usual checks.

- Q.2(b) Explain the differences between direct and indirect methods of contouring. [5] CO 2 BL 2

- Q.3(a) Describe about types of horizontal curves useful for highways and railways. [5] CO 3 BL 2

- Q.3(b) A 3 degree curve is made between two tangents at a chainage of 3606 m at deflection angle 70°. Calculate all basic parameters using 30 m chain. [5] CO 3 BL 3

- Q.4(a) Discuss the difference between plane surveying and geodetic surveying. [5] CO 4 BL 2

- Q.4(b) Two station “A” and “B” 80 km apart have elevation of 15 m and 280 m above mean sea level respectively. Determine the minimum height at signal “B”, So “O” is intervisible by “B”. [5] CO 4 BL 3

- Q.5(a) Define the following astronomical terms: [5] CO 5 BL 2
Zenith and Nadir, Celestial Horizon, prime vertical, latitude and longitude

- Q.5(b) Describe the typical parts of Auto level. [5] CO 5 BL 2

:::28/04/2025:::M