

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

**CLASS: BE
BRANCH: CIVIL**

**SEMESTER: VI
SESSION : SP/2019**

SUBJECT : CE6005 SURVEYING II

TIME: 1.5 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 30.
 2. Candidates may attempt for all 30 marks.
 3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. The missing data, if any, may be assumed suitably.
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- Q1 (a) Define (i) Point of curve, (ii) Long chord [2]
(b) What are the disadvantages of reverse curves? [3]
- Q2 Two straights BA and AC are intersected by a line EF. The angles BEF and EFC are 140° and 145° respectively. A compound curve with common tangent EF has been set. The radius of the first arc is 600 m and that of the second arc is 400 m. Find the chainage of the tangent points, and the point of compound curvature, given that the chainage of the intersection point A is 3415 m. [5]
- Q3 (a) Define (i) Check base, (ii) Satellite station. [2]
(b) What is sag correction (to be applied to base line measurement)? What would be its sign? [3]
What is normal tension?
- Q4 A steel tape 20 m long standardized at 55°F with a pull of 10 kg was used for measuring a base line. Find the correction per tape length if the temperature at the time of measurement was 80°F and the pull exerted was 16 kg. Weight of 1 c.c. of steel = 7.86 g. Wt. of tape = 0.8 kg and $E = 2.109 \times 10^6 \text{ kg/cm}^2$. Coefficient of expansion of tape per degree $F = 6.2 \times 10^{-6}$. [5]
- Q5 (a) Define (i) Conditioned quantity, (ii) Weight of an observation. [2]
(b) What is (i) M.P.V., (ii) M.P.E. [3]
- Q6 Write laws of weight with proper examples. [5]

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