CLASS: B.E   SEMESTER : VI
BRANCH: CIVIL   SESSION : SP/19

SUBJECT: CE6005 SURVEYING - II

TIME: 3.00 Hrs.   FULL MARKS: 60

INSTRUCTIONS:
1. **The question paper contains 7 questions each of 12 marks and total 84 marks.**
2. **Candidates may attempt any 5 questions maximum of 60 marks.**
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.**

Q.1(a)	What are the types of curves?	[2]
Q.1(b)	Define (i) Back tangent, (ii) Versed sine of a curve.	[4]
Q.1(c)	Two tangents of a simple circular curve intersect at chainage 1190 m, the deflection angle being 36°. Radius of the curve is 300 m, length of unit chord is 30 m. Find the chainage of the tangent points and the lengths of sub-chords.	[6]
Q.2(a)	What is Satellite station?	[2]
Q.2(b)	Write a short note on Signals in triangulation survey.	[4]
Q.2(c)	From a satellite station E, 13.8 m from station A, the angles measured to three trigonometrical stations A, B, and C are as follows, the stations C and E being on opposite side of the line AB: Angle BEC = 68°26'36" ; Angle CEA = 32°45'48". The lengths of AC and AB are 5588.4 m and 4371.0 m respectively. Calculate the angle BAC.	[6]
Q.3(a)	What is Most Probable value?	[2]
Q.3(b)	Define (i) independent quantity, (ii) Weighted observation.	[4]
Q.3(c)	Write the laws of weight with examples.	[6]
Q.4(a)	Define axis-signal correction.	[2]
Q.4(b)	What do you mean (i) single angle observation and (ii) reciprocal observation?	[4]
Q.4(c)	The following reciprocal observations were made from two points P and Q: Horizontal distance between P and Q = 6996 m. Angle of elevation of Q at P = 1°56'10". Angle of depression of P at Q = 1°56'52". Height of signal at P = 4.07 m. Height of signal at Q = 3.87 m. Height of instrument at P = 1.27 m. Height of instrument at Q = 1.48 m. Find the difference in level between P and Q. Given R sin 1" = 30.88 m.	[6]
Q.5(a)	Define phase of signal.	[2]
Q.5(b)	What are the types of EDM instruments?	[4]
Q.5(c)	What is Modulation? What are the types of it? Discuss in detail.	[6]
Q.6(a)	What is celestial sphere?	[2]
Q.6(b)	Mention the co-ordinates systems that may be used to determine the position of a celestial body.	[4]
Q.6(c)	Define (i) Declination, (ii) Azimuth, (iii) Altitude.	[6]
Q.7(a)	What do you mean by hydrographic surveying?	[2]
Q.7(b)	What is sounding? Write its importance.	[4]
Q.7(c)	A, B and C are three visible stations in a hydrographical survey. The computed sides of the triangle ABC are AB = 1130 m; BC = 1372 m; CA = 1889 m. A station P is established and its position is to be found by three point resection on A, B, and C. Angle APB and angle BPC being 42°35' and 54°20' respectively. Determine the distances PA and PC.	[6]