Roll No. _____

END SEMESTER EXAMINATION
SEMESTER- V

COURSE CODE : CE506 | **DURATION : 3 (THREE)HRS**
COURSE TITLE : SURVEYING-II | **MAXIMUM MARKS : 75**
SESSION : JULY-DEC.' 2021 | **PASS MARKS : 35 %**

NOTE: *1. Attempt any 5 (five) questions.*
2. Mark for each question is shown against it.
3. Assume suitable logical data wherever necessary.

1. (a) Enlist the various fundamental lines of transit theodolite and explain the relation between them. **(7)**

(b) What is meant by balancing the traverse? State the various rules to do this. **(5)**

(c) Write short notes on consecutive and independent coordinates. **(3)**

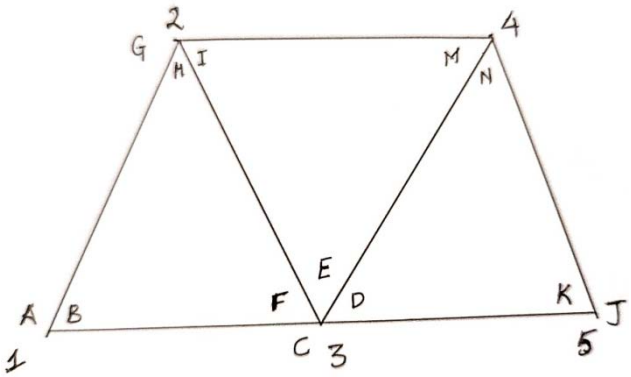
2. (a) Calculate latitudes, departures and closing error for the following traverse adjusts also traverse using Bowditch rules. **(10)**

Line	**Length**	**WCB**
AB	89.31	45°10'
BC	219.76	72°05'
CD	151.18	161°52'
DE	159.10	228°43'
EA	232.26	300°2'

(b) What are the methods of triangulation? Explain briefly any one of the method. **(5)**

3. (a) . Do the Station and figure adjustment for the given figure. **(10)**

A	312°00'24"
B	47°59'40"
C	137°10'29"
D	57°02'42"
E	100°40'25"
F	65°06'20"
G	241°05'13"
H	66°53'30"
I	52°10'20"
J	289°00'30"
K	70°59'30"
L	280°43'58"
M	27°18'12"
N	51°57'53"



(b) Explain fixed hair method. **(5)**

4.	**(a)**	The tachometer was setup at station P following observation is made vertically held staff. The instrument is fitted with an anallatic lens and constant is 100. Find the horizontal distance to staff station and vertical distance of axial reading above or below the instrument. Find RL of Q. That of RL of BM = 1958.3 m.	**(10)**

Instrument station	**Staff reading**	**Vertical angle**	**Staff reading**
P	B.M	-4.22’	1.05,1.03,1.156
P	Q	+10°	0.952, 1.055, 1.158

	(b)	What is transition curve? List out its objectives.	**(5)**
5.	**(a)**	A circular curve has 350 m radius and deflection angle of 45°. Calculate (i) length of curve (ii) tangent length (iii) length of long chord (iv) mid-ordinate (v) chainage of tangent points, if chainage of intersection point is 900 m.	**(10)**
	(b)	List out the types of curves with neat figure.	**(5)**
6.	**(a)**	Define and explain contour, contour interval, necessity of contour plotting. Discuss factors affecting the choice of contour interval.	**(7)**
	(b)	Derive the relation between radius and degree of curve.	**(4)**
	(c)	Explain the methods of reiteration for measuring horizontal angle.	**(4)**
7.	**(a)**	What is interpolation of contours? Explain any two methods of interpolation.	**(7)**
	(b)	Sketch the contours of the following i. Vertical cliff ii. Valley iii. Ridge iv. Steep slope	**(8)**
8.		A measuring staff is held at a distance of 100 m and 300 m from the axis of tacheometer. If the staff intercepts are 0.99 m and 3 m respectively, calculate the instrument constants. Tacheometer is held at A and staff is kept upright at B. If at an angle of inclination of 10° readings are 2.670, 1.835, 1 m, what is the RL of B and distance between A and B? (Given that HI = 1.42 m, RL of A = 450.5 m)	**(15)**

xxxxxxxxxxxxxxxxxx