****Last Date of Submission ……..** **Section CE 21/CE 22**

Babu Banarasi Das -National Institute of Technology & Management, Lucknow

B. Tech Second Year (Third Semester) 2018-19

Department of Civil Engineering

SURVEYING-I-(RCE-302)

Assignment: I (Unit 1)

NOTE-ATTEMPT ALL PARTS

1 explain the fundamental concept of surveying ?

2 what is the basic principal of surveying?

3 define the scale of map?

4 differentiate b/w plane and geodetic survey?

5write the difference b/w plan and map?

6 explain the various type of surveying?

7 explain the source of errors in surveying?

8 what is direct and indirect measurement?

9what is chaining? and write various types of chain ?

10 explain the various instrument used in chain surveying?

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Department of Civil Engineering

SURVEYING-I-(RCE-302)

Assignment: II (Unit II)

NOTE-ATTEMPT ALL PARTS

1 classifies the various types of tapes?

2 what is ranging and methods of ranging?

3 classify various types of obstacles in chain surveying?

3 Explain the tape correction?

4 define compass surveying?

5 differentiate b/w prismatic and surveyor compass?

6 what is bearing? explain various type of bearing?

7 differentiate b/w bearing and azimuths?

8 what do you mean by transiting of theodolite?

9 what is local attraction? And explain influence of local attraction on true bearing ?

10 explain the working of electronic theodolite?

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SURVEYING-I-(RCE-302)

Assignment: III (Unit III)

1. Write short notes on the following : Ideal transition curve, Super elevation, Vertical curve, Two theodolite method of setting out curve.
2. The chainage of the intersection point of two straights is 1080 m and the angle of intersection is 120º. If the radius of a circular curve is 575 m and peg interval is 30 m, find :

(i) Tangent length

(ii) Chainage at the beginning and end of the curve

(iii) Length of the long chord

(iv) Length of the sub-chords and chords

(v) Number of normal chords.

3. A transition curve is required for a circular curve of 410 m radius, the gauge being 1.5 m between rail centers and maximum super-elevation restricted to 12 cm. The transition is to be designed for a velocity such that no lateral pressure is imposed on the rails and the rate of radial acceleration is30 cm/sec_3. Calculate the required length of transition curve and the design speed.
4. (a) The alignment of a road is as follows :

Line WCB Length (m)

AB 30_o 0' 250

BC 90º 0' 150

CD 140º 0' 325

These lines are to be connected by a single circular curve. Find the radius and tangent length.

5. What is Shift? Prove that a transition curve bisects the shift and that the shift bisects the transition curve.
6. Why is a curve provided? What is a degree of a curve? Derive a relation between the radius and degree of a curve.
7. Explain the methods of leveling?
8. What are the different source of errors in leveling? How are they elemented?
9. Explain what is meant by sensitiveness of a level tube?
10. Differentiate between permanent and temporary adjacement of level.

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SURVEYING-I-(RCE-302)

Assignment: IV (Unit IV)

1. Discuss the advantage and disadvantage of plane table surveying over other methods.
2. Discuss with sketch, the various method of orienting the plane table.
3. What id two point problem? How is it solve?
4. What do you mean by traversing ? Describe various methods of traversing.
5. Discuss the procedure, type and uses of traversing.
6. What is triangulation and how is it different from traversing ? What is meant by the strength of triangulation figure?
7. Determine the value of *(D–C)/D* for the triangulation figures (*D* and *C* is related with strength of triangulation figure) if all the stations have been occupied and all the lines have been observed in both directions :

(i) A braced quadrilateral

(ii) A four sided central point figure without diagonals.

8. There are two stations *P* and *Q* at elevations of 195 m and990 m, respectively. The distance of *Q* from *P* is 104 km. If the elevation of a peak *M* at a distance of 37 km from *P* is 302 m, determine whether *Q* is visible from *P* or not. If not what would be the height of scaffolding required at *Q* so that *Q* becomes visible from *P*?
9. What is orientation in Plane Table surveying? Distinguish between Resection and Intersection methods as applied to Plane table surveying.
10. Write short notes on the following : Adjustment of closed traverse, Latitude and Departure, Satellite station.

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SURVEYING-I-(RCE-302)

Assignment: V (Unit V)

1. Explain the element of simple circular curve.
2. Write a theory and methods of setting out simple circular curve.
3. What is transition curve?
4. Write an equation of various transition curve.
5. A vertical curve has an up gradient of 1.45% which is followed by a down gradient of 1.15%. the rate of change of is .35% per chain length of 20m. what is the length of vertical curve?
6. What is the relation between radius of curve R and deflection angle?
7. Drive a equation of cubic parabola for a transition curve.
8. What is total tangent length and prove it?
9. What is Superelevation OR Cant?
10. Two straight alignments intersect at a chainage of 4687.5m with a deflection angle of 43̊. A circular curve of radius 380m with transition curve of 50m each on the two end. Compute the data for setting out the curve with page at 20m for circular curve and 10m for transition curve.

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