Total No. of Question : [4]   **Registration No. :** ☐☐☐☐☐☐☐☐☐

Programme Name : Bachelor of Civil Engineering
Regular S.Y.B.Tech.Sem.IV ESE May / June 2023
IV SEMESTER (2021 BATCH)
201CEL214-Engineering Surveying

Duration : 2 Hours   **Marks : 50**
Instructions :

(Q1) **All questions are compulsory.**   [20.0]

   (1.1) Discuss in detail various methods of measuring bearings in compass surveying.   [6.0]

      CO :- C214.1
      Blooms Taxonomy :- Understand, Apply

   (1.2) The following consecutive readings were taken with the help of a dumpy level--.   [7.0]
      1.805, 2.655, 3.905, 4.025, 1.960, 1.700, 1.595, 1.265, 2.255, 3.055, 2.590, 2.005,
      3.040
      The instrument was shifted after third, sixth and ninth reading. Calculate the RL of all
      points by collimation plane method. The first reading was taken on the staff held on the
      bench mark of RL =100m. Apply the arithmetic check.

      CO :- C214.2
      Blooms Taxonomy :- Apply, Analyze

   (1.3) Explain the process of measuring a horizontal angle using method of repetition. Which   [7.0]
      errors are eliminated using this method.

      CO :- C214.1
      Blooms Taxonomy :- Understand, Apply

(Q2) **All questions are compulsory.**   [10.0]

   (2.1) Write a short note on measurement of areas of irregular figures using digital   [4.0]
      planimeter.

      CO :- C214.2
      Blooms Taxonomy :- Apply, Analyze

   (2.2)   The following, fore bearings and back bearings were observed in traversing with a   [6.0]
      compass.

Line	Fore Bearing	Back bearing
PQ	S 37° 30' E	N 37° 30' W
QR	S 43° 15' W	N 44° 15' E
RS	N 73° 00' W	S 72° 15' E
ST	N 12° 45' E	S 13° 15' W
TP	N 60° 00' E	S 59° 00' W

Calculate the interior angles and correct them for observational errors.

CO :- C214.2
Blooms Taxonomy :- Apply, Analyze

OR [2.2 / 2.3]

(2.3) Following are the lengths and bearings of a traverse ABCD.   [6.0]

Line	Length in m.	Bearing
AB	248.0	30°
BC	320.0	140°
CD	180.0	210°

Calculate the length and bearing of the line DA.

CO :- C214.2
Blooms Taxonomy :- Apply, Analyze

(Q3) **All questions are compulsory.**   [10.0]

(3.1) What is a transition curve? What are the requirements of an ideal transition curve?   [4.0]

CO :- C214.3
Blooms Taxonomy :- Understand, Apply

(3.2) Two straights AB and BC are to be connected by a simple circular curve. The available [6.0]
data is as given below. Calculate the ordinates at 10 m intervals if the curve is to be
set out by the method of offsets from long chord.

  i. Chainage of B (P. I.) = 500 m.
 ii. Radius of curve = 200 m
iii. Angle of deflection = 40 deg.

CO :- C214.3
Blooms Taxonomy :- Understand, Apply

OR [3.2 / 3.3]

(3.3) Explain the field procedure of setting out a curve by the method of offsets from chords   [6.0]
produced.

(Q4) **Solve any two questions out of three.**   [10.0]

(4.1) What is GIS? What are the major GIS functions? What kind of software do you need to [5.0]
create a GIS?

CO :- C214.4
Blooms Taxonomy :- Understand, Apply

(4.2) What is GPS? What are the components of a GPS system? How does GPS work? [5.0]

CO :- C214.4
Blooms Taxonomy :- Understand, Apply

(4.3) What is total station?? Explain the process by which various distance parameters are [5.0]
calculated, when you are using a total station?

CO :- C214.4
Blooms Taxonomy :- Understand, Apply

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