

Please check that this question paper contains _____ questions and _____ printed pages within first ten minutes.

[Total No. of Questions: 09]

[Total No. of Pages:]

Uni. Roll No.

Program: B.Tech (Civil Engineering).

Semester: 3rd

Name of Subject: Surveying & Geomatics.

Subject Code: PCCE-101

Paper ID: 16020

12-01-2022(M)

Time Allowed: 02 Hours

Max. Marks: 60

NOTE:

- 1) Each question is of 10 marks.
- 2) Attempt any six questions out of nine
- 3) Any missing data may be assumed appropriately

Q1. To find out the included angles in a closed traverse PQRSTP, the following observations were made with the compass. Calculate the included angles after correcting for local attractions.

Line	Fore Bearing	Back Bearing
PQ	N 62 ⁰ 45' E	S 62 ⁰ 15' W
QR	N 21 ⁰ 00' W	S 20 ⁰ 45' E
RS	N 71 ⁰ 30' W	S 71 ⁰ 30' E
ST	S 39 ⁰ 00' W	N 38 ⁰ 00' E
TP	S 54 ⁰ 30' E	N 53 ⁰ 15' W

Q2. A section line AB 300 m long on a flat terrain measures 102.4 mm on the vertical photograph. A radio tower also appears on the photograph. The distance measured from the principal points to the image of the bottom and top of the radio tower found to be 7 cm and 8 cm respectively. The average elevation of the terrain was 553 m. Determine the height of the tower. Take $f = 152.4$ mm.

Q3. Discuss the principles of EDM instruments and types of instruments depending upon the type of carrier wave used.

Q4. Explain the following terms in the context of surveying.

- (a) Least Count
- (b) Closing error
- (c) Arithmetic check
- (d) Local Attraction
- (e) Whole to part

Q5. In a proposed reservoir, the areas containing within contours are:

Contour (in m)	Area (in ha)
100	32
95	26
90	24
85	18
80	15
75	13
70	7
65	2

Using the method of end areas, calculate capacity of the reservoir when it is full at 100m level.

Q6. (a) Differentiate between Mosaic and Map.

(b) Write a short note on Stereoscopy.

Q7. (a) Discuss advantages and limitations of Remote sensing.

(b) Explain the interaction of EMR with the atmosphere.

Q8. (a) Explain working system of GPS.

(b) State the different sources of errors in G.P.S.

Q9. The following Consecutive readings were taken with a levelling instrument at an interval of 20 m.: - 2.375, 1.730, 0.615, 3.450, 2.835, 2.070, 1.835, 0.985, 0.435, 1.630, 2.255 and 3.630m. The instrument was shifted after the fourth and eighth readings; The last reading was taken, on a BM-of RL 110,200 m. Determine the RLs of all the points.
