Examinations Commencing from 17th May 2022 to 30th May 2022
Program: **Civil Engineering**
Curriculum Scheme: R-2019 'C' Scheme
Examination: SE   Semester: IV
Course Code: CEC403 and Course Name: Surveying

Time: 2hour 30 minutes   Max. Marks: 80

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Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	A survey is treated as plain survey when the area under consideration is …..
Option A:	Less than 260 sq. km
Option B:	More than 260 sq. km
Option C:	Less than 300 sq. km
Option D:	More than 300 sq.km
2.	The Dip of the needle is ……… angle.
Option A:	Horizontal
Option B:	Vertical
Option C:	Neutral
Option D:	Azimuth
3.	The vertical distance between any two consecutive contours is called
Option A:	contour gradient
Option B:	contour interval
Option C:	inverted counter
Option D:	contour dimension
4.	If the coordinates of P are 200N and 100E and those of Q are 200S and 100E, then the length PQ is …………..
Option A:	100m
Option B:	200m
Option C:	300m
Option D:	400m
5.	The principle of plane tabling is …………….
Option A:	Triangulation
Option B:	Traversing
Option C:	Swinging
Option D:	Parallelism
6.	When the first reading taken on a staff on a BM of RL 103.45m, is 2.875m. The height of instrument is ……
Option A:	106.325 m.
Option B:	2.875 m.
Option C:	100.575 m.
Option D:	103.45 m.

7.	The chord of a curve less than peg interval, is known as
Option A:	Normal chord
Option B:	Sub chord
Option C:	Small chord
Option D:	Short chord
8.	The working principle of tacheometry is based on …….
Option A:	Right angle triangle
Option B:	Isosceles tringles
Option C:	Rectangle
Option D:	Square
9.	The Simpson's rule of computing area is applicable only when number of ordinates is ……….
Option A:	EVEN
Option B:	ZERO
Option C:	INFINITE
Option D:	ODD
10.	For a horizontal line of sight, horizontal distance in tacheometry is given by
Option A:	(f*s) + (f+d)
Option B:	(f/s)*i + (f-d)
Option C:	sf/fd
Option D:	(f/i)*s + (f+d)

Q2	Solve any Two Questions		10 marks each
A	Following Bearing were observed in the field where local attraction was suspected.		

LINE	FB	BB
AB	66°15'	244°00'
BC	129°45'	313°00'
CD	218°30'	37°30'
DA	306°45'	126°45'

Find the Correct Magnetic Bearings and True Bearings if Magnetic Declination is 1°40'E.

B	The following consecutive readings were taken at 30m interval on a continuously sloping ground with a level and 4m levelling staff. 0.680 (on A), 1.455, 1.855, 2.330, 2.885, 3.380, 1.055, 1.860, 2.265, 3.540, 0.835, 0.945, 1.530 and 2.250 (on B). The RL of the point A was 80.750m. Find the gradient of line AB.
C	Explain in detail the road project executed in survey camp and state the utility of the same for a civil engineer.

Q3	**Solve any Two Questions**		**10 marks each**

A

In a closed traverse PQRSTP, the following lengths and bearing of the sides were observed

LINE	Length (m)	Bearing
PQ	725	120°15'
QR	?	?
RS	1250	322°24'
ST	945	235°18'
TP	577.20	182°40'

Compute the length and bearing of side QR?

B

A fixed hair tacheometer fitted with an anallatic lens and having its constant 100, was set up at station C and the following observations were taken on vertically held staff:

Station sighted	Bearing	Stadia reading		Axial hair reading	Vertical angles
		Bottom	Top		
A	320°40'	0.915	2.585	1.750	+10°36'
B	50°40'	0.765	3.655	2.210	+8°54'

Calculate the gradient from point A to point B

C

Write notes on
i) Total Station
ii) Radial Contouring

Q4	**Solve any Two Questions out of Three**	**10 marks each**

A

Compute the following area enclosed between the chain line, irregular boundary line and end offsets by
   i)   Simpson's Rule
   ii)   Trapezoidal Rule

CH (m)	0	20	40	60	80	95	110	140	170	200
Offsets (m)	6.7	5.8	10.3	12.8	9.7	8.8	6.9	8.2	6.5	5.8

B

Tabulate the necessary data to set out a right-handed simple circular curve of 600 m radius to connect two straights intersecting at a chainage of 3605 m by deflection angle method, the angle of intersection being 155° and peg interval 30 m.

C

Explain with suitable diagrams (Any Two)
   i)   Characteristics of Contours
   ii)   Methods of PTS
   iii)   GPS
   iv)   Reciprocal Ranging