



## **BRAINWARE UNIVERSITY**

Term End Examination 2023-2024 Programme - Dip.CE-2022 Course Name - Surveying Course Code - DCEPC302 ( Semester III )

Full Marks: 60

Time: 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

## Group-A

(Multiple Choice Type Question)

1 x 15=15

- Choose the correct alternative from the following: (i) Choosethe correct answer for the blank: In chain surveying field work is limited to a) Linear measurements only b) Angular measurements only c) Both linear and angular measurements d) All answers are correct (ii) Select the correct answer for the blank : In horizontal angles, the error due to imperfect levelling of the plate bubble is a) Large when sights are nearly level b) Large for long sights c) Less for steeply inclined sights d) Large for steeply inclined sights (iii) Choose the correct answer for the blank: Flint glass \_ a) Has slightly the greater refracting power b) Has roughly double refracting power than than crown glass that of crown c) And crown glass proportions yield the d) required focal length and neutralise the All answers are correct dispersion produced by the convex lens at the emergence from the concave (iv) Select the correct answer for the blank: If D is the degree of the curve of radius R, the exact length of its specified chord, is b) Diameter of the curve × sine of half the a) Radius of the curve × sine of half the
- - degree

degree

- c) Diameter of the curve × cosine of half the
- degree
- d) Diameter of the curve × tangent of half the degree
- (v) Select the correct answer for the blank: If a tacheometer is fitted with an anal-latic lens
  - a) Additive constant is 100, multiplying constant is zero
  - c) Both multiplying and additive constants are
- b) Multiplying constant is 100, additive constant is zero
- d) Both multiplying and additive constants are 50
- (vi) To set out a parallel from a given inaccessible point to a given line AB, the following observations are made:Distance AB and angle PAM = a and angle PBA = b are measured

where M is a point on the line BA produced. Choose the perpendicular to the desired parallel line from A and B are:			
a) AB/(cot b - cot a)	b) AB/(cos b - cos a)		
c) AB/(cot a - cot b)	d) AB/(cot a cos b)		
(vii) Select the correct answer for the blank : Red	uced bearing of a line is an angle between		
North line and given line measured clockwise	<ul> <li>b) North line and given line measured anticlockwise</li> </ul>		
c) East or west and the given line	<ul> <li>d) Given line and the part of the meridian whether N end or S end, lying adjacent to it</li> </ul>		
(viii) Select the correct answer for the blank : To a legs, observations are generally made	Wold large centering error with year short		
a) to chain pins	<ul> <li>b) By using optical system for centering the theodolite</li> </ul>		
<ul> <li>c) To a target fixed on theodolite tripod on which theodolite may be fitted easily</li> </ul>	d) All answers are correct		
(ix) Select the correct answer for the blank : In a achieved, if	geodetic surveys higher accuracy is		
a) Curvature of the earth surface is ignored	<ul> <li>b) Curvature of the earth surface is taken into account</li> </ul>		
<ul> <li>c) Angles between the curved lines are treated as plane angles</li> </ul>	d) None of these		
(x) Select the correct answer for the blank : Ac with a transit not properly adjusted may be	curate measurement of deflection angles made by		
<ul> <li>Setting the Vernier A at zero at back stati and then plunging the telescope</li> </ul>	on  b) Setting the Vernier A at zero at back station and turning the instrument to the forward station		
c) Taking two back sights one with the telescope normal and the other with telescope inverted	d) None of these		
(xi) Choose the correct answer for the blank: compared to three point problem			
<ul> <li>a) Gives more accurate problem</li> </ul>			
c) Requires more labour	d) None of the these		
(xii) Select the correct answer for the blank : M effect upon the final results arise due to	listakes which may produce a very serious		
a) In attention	b) In experience		
c) Carelessness	d) All of these		
(xiii) Select the correct answer for the blank : N short, introduces	Measuring with a 30 m chain, 0.01 m too		
a) Positive compensating error	b) Negative compensating error		
c) Positive cumulative error	d) Negative cumulative error		
(xiv) Select the correct answer for the blank : I	n levelling operation		
<ul> <li>a) If second reading is more than first, it represents a rise</li> </ul>	<ul> <li>b) If first reading is more than second, it represents a rise</li> </ul>		
c) If first reading is more than second, it represents a fall	d) If second reading is less than first, it represents a rise		
(xv) Choose the correct answer for the blank increases the intercept if it is	: Tilt of the staff in stadia tacheometry		
a) Away from the telescope pointing dow			
c) Away from the telescope pointing up-h			

**Group-B** (Short Answer Type Questions)

3 x 5=15

3	2. Describe the process of recording measurements in a field book during a chain survey.  3. Compare and contrast the radiation, intersection, and traversing methods in plane table  (3)	
	surveying, highlighting their specific use cases. (3)	) _
4	Explain how latitude and departure are computed in traverse surveying.	133
5	Explain the primary purpose of a Total Station in surveying. (3	10. 2. 5
6	Differentiate between Geographic Meridian and True Magnetic Meridian.	1. 2.2
	OP 13	3) 📜 🧓
	Compare and contrast the Whole Circle Bearing system and the Reduced Bearing system.	0,
		36
	Group-C 5 x	6=30
	(Long Answer Type Questions)	
		(5)
7. 8.	Sketch how would you	(5)
	enter the field book.	
	enter the field book.  (a) A telegraph post is 10 m perpendicularly from 2.5 m chainage to the right of the chain	
	line	
	(b) A road crosses obliquely from left to right at 10 m and 14 m chainage. Perpendicular	
	(b) A road crosses obliquely from left to right at 10 m and 14 m chainage. Perpendicularly offsets are 2 m and 3 m to the side of the road from 5 m and 20 m chainage respectively.  (c) A tube-well is 5 m perpendicularly from 30 m chainage to the left of the chain line.  (d) Total chainage of AB is 45 m.	ART JOIS
	offsets are 2 m and 3 m to the side of the road m chainage to the left of the chain line.	Uni 10
	(c) A tube-well is 5 m perpendicularly from 50 m one 5	IKSI
	(d) Total chainage of AB is 45 m.	<b>Form</b>
	offsets are 2 m and 3 m to the side of the road from 5 m and 20 m chainage road (c) A tube-well is 5 m perpendicularly from 30 m chainage to the left of the chain line.  (d) Total chainage of AB is 45 m.  Brainward  The magnetic bearing of a line CD is S 30°15' W. Calculate its true bearing, if the declination is 10°15' E.	(5)
	CD is \$ 20°15' W. Calculate its true bearing, if the	(5)
9.	The magnetic bearing of a line CD is 3.30 13 W. Calculate to	
	declination is 10°15′ E.	
	. Explain the concept of Whole Circle Bearing and Reduced Bearing. Provide examples of	(5)
40	- 1 : the concent of Whole Click bearing and	
	Line and form of Degring to different	(5)
	converting one form of Search and bearing.	(5)
11	Explain the terms: Types meridian and bearing.  Justify the different methods of contouring and define any one of them.  OR	(3)
12	Justify the different methods of contents of	
	to the foredamental difference between plan and ma	p. (5)
	Justify the american between plan and ma	
	Justify the principal	
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