



BRAINWARE UNIVERSITY

Term End Examination 2023-2024

Programme – Dip.CE-2022

Course Name – Surveying

Course Code - DCEPC302

(Semester III)

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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

1. Choose the correct alternative from the following :

(i) Choose the 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 than crown glass
- b) Has roughly double refracting power than that of crown
- c) And crown glass proportions yield the required focal length and neutralise the dispersion produced by the convex lens at the emergence from the concave
- d) All answers are correct

(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 _____ .

- a) Radius of the curve × sine of half the degree
- b) Diameter of the curve × sine of half the 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 tachometer is fitted with an anal-latic lens _____ .

- a) Additive constant is 100, multiplying constant is zero
- b) Multiplying constant is 100, additive constant is zero
- c) Both multiplying and additive constants are 100
- 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

2. Describe the process of recording measurements in a field book during a chain survey. (3)
3. Compare and contrast the radiation, intersection, and traversing methods in plane table surveying, highlighting their specific use cases. (3)
4. Explain how latitude and departure are computed in traverse surveying. (3)
5. Explain the primary purpose of a Total Station in surveying. (3)
6. Differentiate between Geographic Meridian and True Magnetic Meridian. (3)

OR

Compare and contrast the Whole Circle Bearing system and the Reduced Bearing system. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Define primary purpose of a survey. (5)
8. While measuring a chain line AB, the following offsets are taken. Sketch how would you enter the field book. (5)
 - (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 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.

9. The magnetic bearing of a line CD is S 30°15' W. Calculate its true bearing, if the declination is 10°15' E. (5)

10. Explain the concept of Whole Circle Bearing and Reduced Bearing. Provide examples of converting one form of bearing to another. (5)
11. Explain the terms: Types meridian and bearing. (5)
12. Justify the different methods of contouring and define any one of them. (5)

OR

Justify the principles of surveying and the fundamental difference between plan and map. (5)

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