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Question Paper Code: 43106

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Third Semester

Civil Engineering

14UCE306 - SURVEYING - I

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- In chain surveying, tie lines are primarily provided
 - to check the accuracy of the survey
 - to take offsets for detail survey
 - to avoid long offsets from chain lines
 - to increase the number of chain lines
- The Gunter or Surveyor's Chain is
 - 100 ft
 - 33 ft
 - 66 ft
 - 10 m
- The bearing of a line measured in the direction of the progress of the survey is called
 - Back bearing
 - Whole Circle bearing
 - Fore bearing
 - Quadrantal bearing
- Radiation, intersection, traversing and resection are the four methods of
 - Compass surveying
 - Plane table surveying
 - Chain surveying
 - Compass traversing

5. The last reading taken before shifting the instrument to a new station is said to be
- (a) Back sight (b) Fore sight
(c) Intermediate sight (d) Change point
6. For true difference in elevations between two points A and B, the level must be set up
- (a) Near the point B (b) Near the point A
(c) At the exact midpoint of A and B (d) At any point between A and B
7. The total volume of excavation multiplied by average haul distance is said to be
- (a) Mass haul (b) Free haul
(c) Haul (d) Over haul
8. The bench mark established by Survey of India through out the country is called
- (a) Permanent bench mark (b) GTS bench mark
(c) Temporary bench mark (d) Arbitrary bench mark
9. If the departure and latitude of a line are +78.0m and -135.1m, respectively, the whole circle bearing of the line is
- (a) 150° (b) 30° (c) 60° (d) 120°
10. One of the tacheometric constants is additive, the other constant, is
- (a) Subtractive constant (b) Dividing constant
(c) Multiplying constant (d) Indicative constant

PART - B (5 x 2 = 10 Marks)

11. What is meant by ranging?
12. Define three - point problem.
13. Write the formula for curvature correction, refraction correction and combined correction.
14. What do you mean by contour interval?
15. List out the uses of Anallactic lens.

PART - C (5 x 16 = 80 Marks)

16. (a) (i) List out the points to be kept while booking the field notes in chain surveying. (6)
- (ii) Mention the sources of cumulative and compensative errors in chain survey and discuss how they can be eliminated. (10)

Or

- (b) AB is a chain line crossing a lake. A and B are on the opposite sides of the lake. A line AC , $800m$ long is ranged to the right of AB clear of the lake. Similarly another line AD , $1000m$ long is ranged to the left of AB such that the points C, B and D are collinear. The lengths BC and BD are $400m$ and $600m$ respectively. If the chainage at A is $1262.44m$, calculate the chainage of B . (16)
17. (a) The following fore-bearings and back-bearings were observed while traversing with compass. Calculate the interior angles and correct for observational errors. (16)

Or

- (b) What is Two point problem? Explain how it is solved. (16)
18. (a) Write short note on (i) Reciprocal leveling (ii) Fly leveling (iii) Differential leveling (iv) Simple leveling and state where each is used. (16)

Or

- (b) Determine the corrections due to (a) curvature and (b) refraction if the length of sight is (i) $1200m$ and (ii) $1800m$. (16)
19. (a) Explain the various method of locating the contour. (16)

Or

- (b) Write about the characteristics of contours and their uses. (16)

20. (a) What are the possible sources of errors while using a theodolite? (16)

Or

(b) Describe the procedure involved in the method of repetition and explain the advantages and disadvantages of the same. (16)
