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Question Paper Code: 44106

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

Fourth Semester

Civil Engineering

14UCE406 - SURVEYING -II

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Two variable radius curvatures are called
 - double curve
 - two curve
 - reverse curve
 - compound curve
- The required minimum length of sight distances of design speed 30 mph (48 km/h) is
 - 51m
 - 41m
 - 71m
 - 61m
- Difference between horizontal length and measured length along the cantenary is called
 - sag correction
 - slope correction
 - pull correction
 - alignment correction
- The setting of points in the vertical direction is usually done
 - Boning rods and travellers
 - Sight Rails
 - Slope rails or batter boards
 - all the above
- Systematic Error
 - it produces a serious effect on the final result
 - error that under the same conditions will always be of the same size and sign
 - errors that arise from inattention, inexperience, carelessness and poor judgment
 - all the above

6. Errors that arise from inattention, inexperience, carelessness and poor judgment or confusion in the mind of the observer
- (a) Accidental errors (b) Mistakes
(c) Systematic errors (d) All the above
7. On some total stations it is possible to detach the keyboard and interchange them with other total stations and with GPS receivers. This is called
- (a) excluded surveying (b) Integrated surveying
(c) A or B (d) None of the above
8. Zenith is
- (a) imaginary point directly "below" a particular location
(b) imaginary point directly "above" a particular location
(c) imaginary point directly "proportionate " a particular location
(d) all the above
9. Latitude is
- (a) angles that uniquely define points on a sphere
(b) angles that equally define points on a sphere
(c) angles that uniquely define points on a meridian
(d) angles that uniquely define points on a north pole
10. Hydrographic surveys deal with the mapping of
- (a) large water bodies (b) heavenly bodies
(c) mountainous region (d) canal system

PART - B (5 x 2 = 10 Marks)

11. What is degree of curve?
12. What is meant by satellite station?
13. Differentiate between most probable error and residual error.
14. Write the Advantages of Total station survey.
15. State the differences between lunar tides and solar tides.

PART - C (5 x 16 = 80 Marks)

16. (a) List the various methods of setting out a simple circular curve. Explain briefly the Rankine method of deflection angles. (16)

Or

- (b) Summarize briefly the procedures for setting out compound curve. (16)
17. (a) (i) Describe the satellite station and process of reduction to centre? (10)
- (ii) Show the expression for reducing the angles measured at the satellite station to centre. (6)

Or

- (b) From a satellite station S , 5.8 m from main triangulation station A , the following directions were measured. $A = 0^{\circ} 0' 0''$; $B = 132^{\circ} 18' 30''$; $C = 232^{\circ} 24' 06''$; $D = 296^{\circ} 06' 11''$; $AB = 3265.5\text{ m}$; $AC = 4020.2\text{ m}$; $AD = 3086.4\text{ m}$. Predict the directions of AB , AC and AD from the above given data. (16)
18. (a) Explain Briefly about various classifications of errors. (16)

Or

- (b) Explain the various cases for the determination of most probable value. (16)
19. (a) (i) Explain briefly about the working principles of total station. (12)
- (ii) List out various types of Total station. (4)

Or

- (b) Illustrate the working principle and measuring principle of Electro optical surveying (Total Station) with neat sketches. (16)
20. (a) What is a three point problem in hydrographic surveying? List the various solutions for the problem? Explain in detail. (16)

Or

- (b) (i) List out the advantages of Echo sounding. (8)
- (ii) What are the methods employed in locating soundings? (8)
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