Reg. No. :

Question Paper Code: 43106

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

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)

1. The Gunter or Surveyor's Chain is

    (a) 100 *ft*   (b) 33 *ft*   (c) 66 *ft*   (d) 10 *m*

2. In chain surveying, tie lines are primarily provided

    (a) to check the accuracy of the survey   (b) to take offsets for detail survey
    (c) to avoid long offsets from chain lines   (d) to increase the number of chain

3. Radiation, intersection, traversing and resection are the four methods of

    (a) Compass surveying   (b) Plane table surveying
    (c) Chain surveying   (d) Compass traversing

4. The bearing of a line measured in the direction of the progress of the survey is called

    (a) Back bearing   (b) Whole Circle bearing
    (c) Fore bearing   (d) Quadrantal bearing

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 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

8. 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

9. The diaphragm of a stadia theodolite is fitted with two additional

   (a) horizontal hairs   (b) vertical hairs
   (c) horizontal and two vertical hairs   (d) none of these

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. Define Magnetic Declination.

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) What is meant by ranging a line? Explain the procedure of ranging a line by in direct method. (16)

Or

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(b) *AB* is a chain line crossing a lake. *A* and *B* are on the opposite sides of the lake. *A* line *AC* , 800*m* long is ranged to the right of *AB* clear of the lake. Similarly another line *AD*, 1000*m* long is ranged to the left of *AB* such that the points *C,B* and *D* are collinear. The lengths *BC* and *BD* are 400*m* and 600m respectively. If the chainage at *A* is 1262.44*m*, 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) Draw a neat sketch of prismatic compass and mark all its salient parts. (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) The following observations were made to determine the sensitivity of two bubble tubes. Determine which bubble tube is more sensitive. The distance of the staff from the instrument was 80*m* and the length of one division of both bubble tubes is 2 *mm*. (16)

Bubble tube		Bubble Reading		Staff reading
		L.H.S	R.H.S	
A	(i)	13	5	1.618
	(ii)	18	12	1.767
B	(i)	15	3	1.635
	(ii)	6	14	1.788

19. (a) Write about the characteristics of contours and their uses. (16)

Or

(b) Explain the various method of locating the contour. (16)

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

Or

(b) Draw a neat sketch of a vernier theodolite and explain the function of various parts. (16)

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