Reg. No. :

Question Paper Code: 41136

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

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. A cross staff is used for

   (a) alignment of a survey line
   (b) Setting perpendicular lines survey lines
   (c) marking of survey stations
   (d) setting a line at an angle to a survey line at a point

2. Correction due to sag of a tape is

   (a) always positive
   (b) always negative
   (c) sometimes negative and sometimes positive
   (d) dependent on the temperature conditions

3. Magnetic bearing of a line is

   (a) the horizontal angle between any two lines
   (b) the vertical angle of a line from the horizontal plane
   (c) the horizontal angle between the magnetic meridian and the line
   (d) the vertical angle between the magnetic meridian and the line

4. The two point problem is essentially a problem of

   (a) orienting the plane table   (b) finding the line joining two points
   (c) centering the table   (d) solving a triangle

5. A plumb line is a line

    (a) lying on a level surface   (b) lying on a horizontal plane

    (c) perpendicular to a level surface   (d) that joints two points on ground

6. Reciprocal leveling is a method of leveling that eliminates the error due to

    (a) curvature

    (b) inclination of line of collimation

    (c) curvature and refraction

    (d) curvature and refraction and inclination of line of collimation

7. Closed contours of decreasing values towards their centre, represent

    (a) a depression   (b) a river bed

    (c) a hill   (d) a saddle or pass

8. A contour or contour line is a line joining

    (a) Points having the same elevation

    (b) a set of points having different elevations

    (c) a set of equidistant points having different elevations

    (d) joining points of a traverse surveyed

9. Focusing the objective lens is an operation done

    (a) to get the crosshairs to clear view

    (b) every time to focus the object being sighted

    (c) for reading the vernier clearly

    (d) for reading vertical angles

10. When you transit the telescope, you rotate the telescope about

    (a) the vertical axis   (b) the trunion axis

    (c) the optical axis of the telescope   (d) the line of collimation

PART - B (5 x 2 = 10 Marks)

11. What are the errors in chaining?

12. Define Magnetic Declination.

13. What are the different kinds of bench marks?

14. State contour interval.

15. List out the uses of Anallactic lens.

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

Or

(b) A survey line ABC crossing a river at right angles cuts its banks at B and C. To determine the width BC of the river, the following operation was carried out. A point E was established on the perpendicular BE such that angle CEF is a right angle where F is a point on the survey line. If the chainage of F and B are respectively 1200 m and 1320 m, and also the distance EB is 90 m, calculate the width of the river and the chainage of C. (16)

17. (a) Draw a neat sketch of prismatic compass and mark all its salient parts. (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) Write about the characteristics of contours and their uses. (16)

Or

(b) What is meant by interpolation of contours? Describe the various methods used. (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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