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AG205

(Following Paper ID and Roll No. to be filled in your Answer Book)
PAPER ID : 180211
Roll No.

B. Tech.

(SEM. II) THEORY EXAMINATION, 2014-15
SURVEYING & LEVELING

Time : **3** Hours]   [Total Marks : **100**

Note :   Attempt each question. Assume data wherever necessary. The use of calculator is permitted.

SECTION - A

1   Answer the following short answer type   10×2=20
       questions :
       (a)   What do you mean by magnetic declination?
       (b)   Differentiate between plan and map.
       (c)   What are the parts of a Prismatic compass?
       (d)   Define Surveying. Write few lines on its basic concepts.
       (e)   Enumerate the accessories of Plane Table Survey.
       (f)   Write short note on Abney level.
       (g)   What is magnetic Meridian.
       (h)   Rule out a page to entry levels in a level book.
       (i)   What is the basic principle of Theodolite?
       (j)   Differentiate between back bearing and back sight.

SECTION - B

2 Answer three parts of the following :   10×3=30

(a) Find back bearing of the following observed bearings:

(i)   AB = 41° 15'

(ii)   BC = 138°18'

(iii) CD = 208°22'

(iv)   DE = 316°26'

(b) Plot the following cross staff survey of a field ABCDEFG and calculate its area. (All dimensions are in metres.)

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            750    D
            650              210 E
   C  180   490
            300              250 F
   B  160   180
            100              50 G
             0     A
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(c) What is Orientation? What are the different methods of Orientation of a plane table?

(d) Write short note on the following :

(i)   Bench mark

(ii)   Bearing.

(e) What are the temporary and permanent adjustments of a level? Discuss in detail.

SECTION - C

3   Answer all parts of the following :   **10×5=50**

(a)   How will you find the height of a hill with the help of Theodolite? Also discuss the temporary adjustments.

OR

`Following consecutive readings were taken at a common interval of 50 m. The bench mark was given as 100 m. The dumpy level was shifted after 6th reading : 0.50, 0.85, 1.35, 2.28, 3.75, 4.10, 0.45, 1.20, 2.55, 3.15 and 4.25 m.
Rule out a page of level book and find the reduced levels of the above points. Apply the checks also?

(b)   Attempt any two parts of the following:

(a)   Explain the working of Abney level.

(b)   Explain the radiation method used in plane table survey.

(c)   Explain the theory and working of a Planimeter.

OR

What are the methods of plane table survey? Discuss intersection method in detail.

(c)   Where the errors in compass survey is caused? Give remedial measures.

OR

How will you convert the quadrantal system bearing to whole circle system bearing? Also show the errors caused in this survey.

(d) Name the general classes of survey. Describe the types of chains commonly used for surveying, with neat and labeled diagram.

OR

A 20 m chain was found to be 10 cm too long after chaining a distance of 1500 m. It was found to be 18 cm too long at the end of day's work after chaining a total distance of 2900 m. Find the true distance if the chain was correct before the commencement of the survey.

(e) What is the principle of chain survey? Describe the cross staff survey with the help of example.

OR

Explain the simple and differential leveling.

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