SURIL SE – Sem III – Civil ° CBSGS

05/06/2015

24 copies

QP Code : 4766

(3 Hours) **[Total Marks : 80**

N. B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **three** question out of remaining questions.
(3) Illustrate answers with neat sketches wherever required.
(4) Attempt sub-question in order.
(5) Assume any suitable data if required and state the same clearly.

1. Attempt any **four** :– **20**
   (a) Explain principles of surveying with suitable example
   (b) Explain with neat sketch dip of magnetic needle.
   (c) Describe various method of plane table surveying.
   (d) Write an exhaustive note on characteristics of contour.
   (e) Explain Bowditch rule for adjustment of theodolite traverse.
   (f) Compare Trapezoidal Rule and Simpson's Rule for determination of area.

2. (a) Exlain the obstacles in chaining. **6**
   (b) On a map drawn to a scale of 40 m to 1 cm a surveyor measured the distance between two stations as 4000 m. But it was found that by mistake he had used a scale of 100 m to 1 cm. Find the true distance between the stations. **7**
   (c) A closed traverse is conducted with five stations A, B, C, D and E taken in anticlockwise order, in the form of regular pentagon. If the F.B. of AB is 30° find the F.B. of other side. **7**

3. (a) Explain the various type of bench marks in levelling. **4**
   (b) Discuss the advantages and disadvantages of plane table survey. **6**
   (c) The following consecutive reading were taken with a levelling instrument of intervals of 20 m 2.375, 1.730, 0.615, 3.450, 2.835, 2.070, 1.835, 0.985, 0.435, 1.630, 2.255 and 3.630 m. The instrument was shifted after the fourth & eigth reading. The last reading was taken on BM of RL 100.200 m. Find the RL of all the points. **10**

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4. (a) What is the spire test & how is it carried out in the field. **8**

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(b) Calculate latitudes, departures & closing error for the following traverse & adjust using Bowditch Rule 12

Line	length	W.C.B.
AB	89.31	45°10'
BC	219.76	72°05'
CD	151.18	161°52'
DE	159.10	228°43'
EA	232.26	300°42'

5. (a) The following perpendicular offsets was taken from a chain line to an irregular boundary. Calculte the area using trapezoidal and simpsons rule. 10

Chainage (m)	0	30	60	90	120	150	180	210
Offsets (m)	0	2.65	3.80	3.75	4.65	3.60	5.00	5.18

(b) Explain interpolation method of contour. 5

(c) Explain fly levelling. 5

6. Write short notes on any **four** :– 20

(a) Reciprocal levelling
(b) Orientation in PTS
(c) Area of zero circle
(d) Hyptenusal allowance
(e) Fundamental lines of a theodalite & relation between them

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