Diploma in Civil Engineering / Diploma in Electrical & Mechanical Engineering

Term-End Examination

June, 2011

02974

BET-023 : ELEMENTS OF SURVEY

Time : 2 hours   *Maximum Marks : 7(*

Note : *Question number 1 is* **compulsory.** *Attempt* **any fou**
questions from the remaining. All questions carry **equa**
marks.

1. Select the most appropriate answer for each of the following multiple choice objective type question :   **7x2=14**

    (a) Number of links in 20 m chain is :

    (i)   66   (ii)   100

    (iii) 33   (iv) None of above

    (b) Magnetic bearing of a line is 120°. 30'. Find true bearing if magnetic declination is 3°. 30' East :

    (i)   117°   (ii)   124°

    (iii) 125°   (iv) None of above

    (c) Fore bearing of a line is N 35° W, Back bearing of the same line will be :

    (i)   S 35° E   (ii)   N 35° E

    (iii) S 35° W   (iv) None of above

(d) Orientation of plane table is made by :
  (i) Alidade
  (ii) Trough compass
  (iii) Plumb Bob
  (iv) None of above

(e) Levelling should start from :
  (i) Datum   (ii) Bench Mark
  (iii) Fore sight   (iv) None of above

(f) Line joining equal R. L. points is called :
  (i) Line of sight   (ii) Fore sight
  (iii) Contour line   (iv) Chain line

(g) Levelling of Dumpy level is made with the help of :
  (i) Foot screw
  (ii) Tangential screw
  (iii) Focussing screw
  (iv) One of above

(a) What do you mean by Direct Ranging and Indirect Ranging ? Explain making neat sketch.   6

(b) At the end of A survey work a 20 m chain was found to be 6 cm long. The area of the plan drawn with the measurement taken with this chain is 122 cm^2 and the scale adopted was 2 m to 1 cm. What is true area of the field if the chain was exactly 20 m long at the commencement of work ?   8

3. (a) Draw the conventional sign for the **6** following.
(i) Public Building
(ii) Survey Tree
(iii) North Direction
(iv) Railway line
(v) Electric line
(vi) Temple

(b) The following are the observed fore and back **8** bearing of line of a closed traverse. Correct them where necessary for local attraction :

Line	F. B	B. B
AB	292° . 15'	111° . 45'
BC	221° . 45'	41° . 45'
CD	90° . 05'	270° . 0'
DE	80° . 35'	261° . 40'
EA	37° . 0'	216° . 30'

4. (a) Explain the following terms : **4**
(i) Local attraction
(ii) Line of collimation

(b) The following consecutive reading were taken **10** along with levelling staff of a continuously sloping ground at an interval of 20 meters : 0.345 on A, 1.450, 2.630, 3.875, 0.655, 1.745, 2.965, 3.945, 1.125, 2.475, 3.865 on B. The elevation of A was 60.350 m. Enter the above reading in a level book form and work out the R. L. by rise and fall method or Height of instrument method.

5.   (a)   What are the common difficulties faced in   **8**
levelling ? How will you overcome each of
them.

    (b)   Explain the methods of contouring .   **6**

6.   (a)   Explain Temporary adjustment of Dumpy   **6**
level.

    (b)   What are the uses of theodolite ? Explain   **8**
one method for finding horizontal angle by
theodolite.

7.   What do you mean by three point problem ?   **14**
What are the methods of solving it ? Explain one
of them.

———