



RM-6033

B. E. I (Sem. II) (All Branches) Examination

April / May – 2010

Basic Civil Engineering

Time : Hours]

[Total Marks : 100

Instruction :

(1)

नीचे दृशविले निशानीवाणी विगतो उत्तरवही पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="B. E. 1 (Sem. 2) (Civil)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="Basic Civil Engineering"/>	<input type="text"/>
Subject Code No. : <input type="text" value="6"/> <input type="text" value="0"/> <input type="text" value="3"/> <input type="text" value="3"/>	<input type="text"/>
Section No. (1, 2,.....) : <input type="text" value="1&2"/>	<input type="text"/>
	Student's Signature

- (2) Answers to the **two** sections must be written in **separate** answer books.
- (3) Figures to the **right** indicate the full marks.
- (4) Draw neat and labelled sketch wherever **necessary**.
- (5) Assume suitable data if necessary and mention it clearly.

SECTION - I

- 1 (a) Fill in the blanks. 5
 - (i) Lines joining the points of zero declination are _____ lines.
 - (ii) Length of Gunter's chain is_____.
 - (iii) Vertical distance between two consecutive contour is known as_____
 - (iv) The main principle of the surveying to work from whole to the_____
 - (v) An imaginary lines joining the points of equal elevation is known as_____
- (b) Match appropriate pairs. 5

List-I	List-II
(i) Linear measurement	(i) Dumpy level
(ii) Angular measurement	(ii) 30 m chain
(iii) Levelling	(iii) Capacity of resevoir
(iv) Contouring	(iv) Planimeter
(v) Area of irregular figure	(v) Compass

- (c) State that the following TRUE or FALSE. 5
- (i) When consecutive contour line runs close together, it indicates a flatter slope.
 - (ii) The bench mark established by the survey of India is known as the permanent BM.
 - (iii) In the prismatic compass the zero is marked on the south end.
 - (iv) In optical square the mirrors are fixed at an angle of 60° .
 - (v) Curvature of the earth is ignored in the geodetic surveying.

- 2 (a) Explain the fundamental principles of surveying. 5

OR

- (a) Explain the function of the following : 5
- (i) Arrow
 - (ii) Chain
 - (iii) Ranging rod
 - (iv) Line Ranger
 - (v) Optical Square.
- (b) The distance between two stations was measured with a 20.00 m chain and found to be 1200 m. The same distance was measured with a 30.00 m chain and found to be 1195.40 m. If the 20.00 m chain was 5.00 cm too short, what was the error in the 30.00 m chain ? 5
- (c) Differentiate between following : 10
- (i) Magnetic bearing and True bearing.
 - (ii) W.C.B. and True bearing.
 - (iii) Magnetic bearing and Arbitrary bearing
 - (iv) Open Traverse and Close Traverse.

OR

- (c) (i) Following bearings were taken in traverse survey conducted with a prismatic compass at a place where local attraction was suspected : 6
- | Line | Fore Bearing | Back Bearing |
|------|-----------------|-----------------|
| AB | $44^\circ 30'$ | $226^\circ 30'$ |
| BC | $124^\circ 30'$ | $303^\circ 15'$ |
| CD | $181^\circ 0'$ | $1^\circ 0'$ |
| DA | $289^\circ 30'$ | $108^\circ 45'$ |
- At what station do you suspect local attraction?
Find the correct bearings of the lines.
- (ii) A line was drawn to magnetic bearing of $238^\circ 20'$ on an old map, when magnetic declination was $5^\circ 40'$ E. To what bearing it should be set now, if present magnetic declination is $3^\circ 10'$ W? 4

- 3 (a) Define following terms : (any **five**) 5
(i) Local attraction
(ii) Isogonics line and Agonic line
(iii) Bench Mark
(iv) Whole Circle Bearing
(v) Quadrantal Bearing
(vi) Surveying
(vii) Levelling.
- (b) Explain the temporary adjustment of dumpy level. 5

OR

- (b) What are the uses of the contour map. 5
- (c) The following consecutive readings were taken with a level and 4 m staff on a continuously sloping ground at an interval of 30 m. 5
0.750, 1.520, 1.925, 2.415, 3.770, 1.105, 1.885, 2.385, 3.480, 0.555, 1.235, 0.725
The reduced level of the first point was 150.00 m. Rule out a page of level field book and enter this reading. Calculate the reduced levels of all the points by Height of Instrument method. Also find the gradient of the line joining the first and last point.

SECTION - II

- 4 (a) Explain the following terms in one sentence : (any **five**) 5
(i) Foundation
(ii) Frog
(iii) Lintel
(iv) Baluster
(v) Course
(vi) Igneous Rocks
(vii) Style.
- (b) State if the following sentences are TRUE or FALSE : 5
(any **five**)
(i) Foundation is a part of building below the ground level.
(ii) King-post truss has slope only on one side.
(iii) English bond is stronger than Flemish bond.
(iv) The 9 cm × 9 cm side of a brick as seen in the wall face is known as stretcher.
(v) Air pollution has resulted in increase in temperature.
(vi) Varnish is a type of paint.

- 5 (a) Draw a neat sketch and label important parts **15**
(any **three**)
- (i) Queen-Post truss
 - (ii) Grillage Foundation
 - (iii) Flemish bond
 - (iv) Dog-legged stair
 - (v) Battened, ledged and braced doors.
- (b) Distinguish between : **5**
Uncoursed and coursed rubble masonry.
- 6 (a) Explain in brief environmental pollution. **5**
- (b) Write short notes on : (any **three**) **15**
- (i) Ozone depletion
 - (ii) Types of cement
 - (iii) Stones used in construction
 - (iv) Functions of foundation
 - (v) Trussed roofs.
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