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KC-6033

B. E. I (Sem. II) (Civil) Examination

November/December – 2012

Basic Civil Engineering

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

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. I (Sem. II) (Civil)**

Name of the Subject :

☛ **Basic Civil Engineering**

☛Subject Code No. : **6 0 3 3** ☛Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

(2) Figures to the right indicate the full marks.

(3) Draw neat and labelled sketch wherever necessary.

(4) Assume suitable data if necessary and mention it clearly.

1 (a) Fill in the blanks : **10**

(i) Series of connected survey lines are known as _____.

(ii) Optical square is used for taking _____ offset.

(iii) Clinometer is used to measure _____.

(iv) If the measured length is greater than the correct length then the correction is _____.

(v) _____ is the fixed point of known elevation above the datum.

(vi) The difference between forebearing and backbearing is always _____.

(vii) For a closed traverse summation of five angles should be _____.

(viii) Cadastral surveys are carried out for _____.

(ix) Vertical distance between two consecutive contours is known as _____.

(x) Tropical surveys are used for _____.

(b) Match appropriate pairs : **5**

List I	List II
(a) Foresight	(1) Level line from which vertical distances are taken
(b) Line ranger	(2) marked by PWd, railway and irrigation department
(c) Datum	(3) used to for ranging line.
(d) Permanent bench marks	(4) Last staff reading at a setup.
(e) Odometer	(5) An instrument attached to wheel of vehicle

2 Attempt any four : **20**

(a) What is magnetic declination ? Discuss in detail.

(b) The distance between two stations was measured with 20m chain and found to be 1200 m. The same distance when measured with 30m chain was found to be 1195.40 m. If the 20 m chain was 5cm too short, what was the error in 30 m chain ?

(c) Differentiate between :

(i) Whole circle bearing and reduced bearing

(ii) Open traverse and closed traverse

(d) The following are the bearings of a closed traverse :

Side	FB	BB
AB	N 45° 30' E	S 45° 30' W
BC	S 60° 0' E	N 60° 0' W
CD	S 10° 30' W	N 10° 30' E
DA	N 75° 45' W	S 75° 45' E

Calculate the interior angles of the traverse.

(e) With a neat sketch explain the construction of :

(i) Prismatic compass

(ii) Optical square

3 Attempt any three : **15**

(a) Define any five

(i) Levelling

(ii) Bench mark

(iii) Change point

(iv) Magnetic declination

(v) True bearing

(vi) Height Instrument

(b) Enlist difficulties in levelling and explain them in short.

(c) Explain various uses of contour map.

(d) The following consecutive readings were taken with a level and a 3m staff on a continuously sloping ground at a common interval of 20 m.

0,602, 1.355, 1.905, 2.430, 2.985, 3.480, 1.155, 1.960, 2.165, 3.640, 0.935, 1.145, 1.630 and 2.155. The reduced level of the first point A was 194 m. Rule out a page of a level field book and enter the above readings. Calculate the reduced levels of points by Height of Instrument method.

4 (a) Critically discuss 'Green house effect'. **10**

(b) Distinguish English Bond and flemish bond. Draw figures also. **10**

5 Explain the following terms in one sentence each : (any ten) **10**

(i) Header
(ii) Stretcher
(iii) Carnive
(iv) Corbel
(v) Masonry
(vi) Gable
(vii) Hold fast
(viii) Foundation
(ix) Rise
(x) Course
(xi) Facing
(xii) Backing
(xiii) Plinth

6 Draw neat figures of following. Lable vital parts : (any four) **20**

(i) Dog-legged stair
(ii) Circular stair
(iii) Battened door
(iv) Section of flemish bond 1/2, 01 and 1 1/2 brick thick walls
(v) Queen post roof truss.