

Roll No.

Total Pages : 04

BT-3/D-19
SURVEYING-1
CE-207E

33020

Time : Three Hours]

[Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Define classification of Survey on the different basis.
(b) To continue a survey line AB past an obstacle, a line BC 300 m long was set out perpendicular to AB and from BC angle BCD and BCE was set out at 60° and 45° . Determine length which must be chained off along CD and CE in order that ED may be in AB produced. Also determine the obstructed length BE.
2. (a) What do you understand by the term Local attraction ? Explain it in detail.

- (b) The following bearing observed in running a compass traverse :

Line	Fore Bearing (F.B.)	Back Bearing (B.B.)
AB	$124^\circ 30'$	$304^\circ 30'$
BC	$68^\circ 15'$	$246^\circ 0'$
CD	$310^\circ 30'$	$135^\circ 15'$
DA	$200^\circ 15'$	$17^\circ 45'$

At what station do you suspect Local attraction ?
Determine the correct magnetic bearings ?

Unit II

3. (a) What are the characteristics of contours and also mention some uses of it ?
(b) The following consecutives readings were taken with a level and 3 m staff on continuously sloping ground at a common interval of 20 m :
0.602, 1.234, 1.860, 2.574, 0.238, 0.914, 1.936, 2.872, 0.568, 1.824, 2.722
The reduced level of first point was 192.125. Rule out a page of a level field book and enter the above reading. Calculate the reduced level of points by the collimation method.

4. (a) Explain the method of plane tabling ? Explain them briefly.
(b) Explain two-point problem in detail and also mention errors in plane tabling.

Unit III

5. (a) What do you understand by theodolite ? Write down its uses. Describe its temporary adjustment.
(b) The following observation of length and bearing were recorded for a closed traverse. Calculate the length and bearing of line DA.

Line	Length (in m)	Bearing
AB	75	110°
BC	180	45°
CD	60	320°
DA	?	?

6. (a) Explain tachometry in detail.
(b) What is Tachometric Surveying ? Write down instrument used for it and also mention its characteristics.

Unit IV

7. (a) Describe the classification of the circular curve. Name the various parts of the circular curve with neat sketch.

- (b) Derive formula for laying out the circular curve by ordinate or offset from the long chord.

8. (a) What is the transition curve ? What are its advantages ? Also write its requirements.
(b) Define the following :
(i) Vertical Curve
(ii) Gradient
(iii) Length of vertical curve
(iv) Rate of change of grade.