



MUZAFFARPUR INSTITUTE OF TECHNOLOGY, MUZAFFARPUR
B.Tech 6th Semester Mid-Term Examination, 2018
Transportation Engineering- I (011X19)

Time: 2 hours Full Marks: 20

Instructions: (i) Attempt any four questions. Attempt at least one question from group A and B.
(ii) Question No. 1 is compulsory.
(iii) All questions carry equal marks.

1. Chose the correct option of the following

(a) A triangle is said to be well-conditioned when its angles should lie between

1. 30° and 120° .
2. 20° and 150° .
3. 15° and 135° .
4. None of this.

(b) Local attraction in compass may exist due to:

- (i) Incorrect leveling of the magnetic needle.
- (ii) Loss of magnetism of needle.
- (iii) Friction of the needle at the pivot.
- (iv) Presence of magnetic substance near the instrument.

(c) In the QB system, a WCB of $293^\circ 30'$ can be expressed as:

- (i) $W23^\circ 30' N$
- (ii) $N66^\circ 30' W$
- (iii) $S113^\circ 30' N$
- (iv) $N23^\circ 30' W$

(d) What do you mean by offset?

(e) In chain surveying, field work is limited to

- (i) linear measurements only
- (ii) angular measurements only
- (iii) both linear and angular measurements
- (iv) all the above

(f) What is the full form of EDM?

2. A traverse ABCDA is made in the form of a square taking in clockwise order. If the bearing of AB is $120^{\circ} 30'$, find the bearings of other sides.
3. What do you mean by surveying? What are its basic principles and classifications?
4. The observed bearing of a closed traverse are given below. Find the station affected by local attraction and correct the bearings by finding the local attraction at the affected stations. Also, find the true bearings of the line if the declination is $10^{\circ}W$.

Line	FB	BB
AB	$36^{\circ}00'$	$216^{\circ}45'$
BC	$98^{\circ}15'$	$276^{\circ}00'$
CD	$201^{\circ}45'$	$23^{\circ}15'$
DA	$322^{\circ}45'$	$142^{\circ}45'$

5. Explain the concept of WCB and QB. Explain with suitable examples the process involved in conversion of WCB to QB.
6. The following are the fore and back bearings of the sides of a closed traverse:

Side	FB	BB	Length
AB	$150^{\circ}15'$	$330^{\circ}15'$	20m
BC	$20^{\circ}30'$	$200^{\circ}30'$	15m
CD	$295^{\circ}45'$	$115^{\circ}45'$	17m
DE	$218^{\circ}00'$	$38^{\circ}0'$	11m
EA	$120^{\circ}15'$	$300^{\circ}30'$	8m

Calculate the interior angles of the traverse.