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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – May 2019

Second Year (III Semester), B. Tech. in Civil Engineering

Time: 03 Hours

Sub: Surveying - I (BTCVC304)

Max Marks: 60

**INSTRUCTIONS TO THE STUDENTS**

1. Attempt any five questions from the given six questions.

2. Illustrate your answers with neat sketches, diagrams etc. where ever necessary.

3. Necessary data is given in the respective questions. If such data is not given, it means that the knowledge of that data is a part of the examination.

4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly.

(Marks)

Q.1. Solve any three from the following:

- (a) What are the different obstacles in chaining operations? Explain any one method of overcoming the obstacle? (4)
- (b) Explain: Construction and use of 20 m chain (with sketch). (4)
- (c) Write a short note on mistakes in chaining. (4)
- (d) A 30 m chain was tested before the commencement of the day's work and was found to be correct. After chaining a distance of 100 chains it was found to be 5 cm too short. At the end of day's work after chaining a total distance of 180 chains, the chain was found to be 10 cm too long. What was the true distance chained? (4)

- Q.2. (a) Define the following terms used in compass surveying: Dip of needle, Local attraction, and True meridian. (6)
- (b) Compute the interior angles of the traverse PQRST if the bearings of the side are: (6)

Side	Fore Bearing	Back Bearing
PQ	107° 15' 00"	287° 15' 00"
QR	22° 00' 00"	202° 00' 00"
RS	231° 30' 00"	101° 30' 00"
ST	189° 15' 00"	9° 15' 00"
TP	124° 45' 00"	304° 45' 00"

- Q.3. (a) Explain in brief the intersection method of plane tabling. (6)
- (b) List the minor instruments used in plane table surveying. (6)

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- Q.4. (a) A level is set up at station P. The reading on the staff when held at point A 360 m away from O, is 2.150 and is 3.895 when held at other point B, 550 m away. Find the true difference of level between A and B. (6)
- (b) Write the fundamental characteristics of contour lines? What are the uses of contour maps? (6)

- Q.5. (a) List the parts of a Theodolite. (12)

Following deflection angles were measured in running a traverse from A to G.

Station	Deflection angle	Station	Deflection angle
B	23° 47' R	E	15° 38' R
C	18° 19' L	F	10° 12' L
D	37° 20' R		

If the true bearing of AB is N 63° 18' E, find the true bearings of the other sides.

or

The following is the closed theodolite traverse. Balance the traverse and calculate the independent coordinates in the form of Gale's Table. (12)

Line	Length (m)	Angle	Remarks
AB	1618	A 55° 20'	Bearing of line
BC	1050	B 104° 47'	AB = 37° 18'
CD	1725	C 54° 17'	
DA	485	D 145° 23'	

- Q.6. (a) Write a short note on route surveying for highways. (6)

- (b) Write a short note on mine surveying. (6)

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