

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular), Nov.-Dec.2015

B. Tech in Civil Engineering, Semester III

Roll No.....

CE308: SURVEYING

Time: 3 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.

Q.1A Objective type multiple choice questions (10 questions @ 1 mark)

10

- i. The value of Contour Interval for town planning and reservoir survey is:
 - (a) 2 to 3 m
 - (b) 0.2 to 0.5 m
 - (c) 0.5 to 2 m
 - (d) None of these
- ii. Both horizontal and vertical scales are kept equal in:
 - (a) Leveling by Cross sectioning
 - (b) Profile levelling
 - (c) Both of the above
 - (d) None of above
- iii. A level line is a line lying in a level surface. It is therefore :
 - (a) Parallel to plumb line at all points
 - (b) Normal to plumb line at all points
 - (c) Sometimes normal and sometime parallel to plumb line
 - (d) none of these
- iv. The Surveyor compass graduated on :
 - (a) W.C.B. system
 - (b) Quadrantal system
 - (c) Both
 - (d) None of above
- v. The length of Engineer's chain is consist of :
 - (a) 30 m
 - (b) 66 ft.
 - (c) 100 ft.
 - (d) 33 ft.
- vi. In a theodolite, revolving the telescope by 180° in vertical plane about horizontal axis is known as:
 - (a) Face right
 - (b) Changing face
 - (c) Face left
 - (d) Telescope inverted

- vii. During Plane table surveying the Intersection method is used when :
 - (a) The distance between the points and instrument station are small (with in tape length)
 - (b) The distance between the points and instrument station are too large.
 - (c) both of above
 - (d) None of these
- viii. The process of putting the plane table in to some fixed direction is known as:
 - (a) Centering
 - (b) levelling the table
 - (c) Orientation
 - (d) Sighting
- ix. During the leveling height of Instrument is equal to :
 - (a) BS + Horizontal angle
 - (b) Known Elevation + TP
 - (c) Known Elevation - IS
 - (d) Known Elevation + BS
- x. In a survey line the co-ordinate length measured at right angles to the meridian direction is known as:
 - (a) Latitude
 - (b) Departure
 - (c) Both are correct
 - (d) Both are incorrect

- Q.2 Short answer type questions (4 questions @ 2.5 marks) 10
- i. Write the short note on the following terms :
 - (a) Plan
 - (b) Map
 - ii. Explain the major difference between the following:
 - (a) Bearing and angle
 - (b) Plane surveying and Geodetic surveying
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- Q.3A Explain the common systems of notation of bearings in case of compass surveying. 05
- Q.3B Define the scale. Explain the various types of scales used in surveying. 05
- Q.4A Explain the "traversing", the method which is widely used to laydown survey lines, in case of plane table surveying. 05
- Q.4B Explain the Profile leveling with reference to the following: 05
- (i) Field procedure and
 - (ii) Plan & Plotting of profile
- Q.5A A 20 m chain used for survey was found to be 20.10 m at the beginning and 20.30 m at the end of the work. The area of the plan drawn to a scale of 1cm= 8 m was measured with the help planimeter and was found to be 32.56 sq. cm. Find the true area of the field. 05

Q.5B Write short note on the following: 05
 (a) Photogrammetric Survey
 (b) EDM Survey

Q.6A Define Orientation in Plane Table Surveying. Explain "Resection" after orientation by compass and backsighting. 05

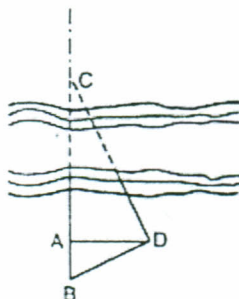
Q.6B Write an explanatory note on "Fundamental Principles of Plane surveying" 05

OR

Q.6B How will you eliminate the local attraction in case of compass surveying? Explain the methods of elimination. 05

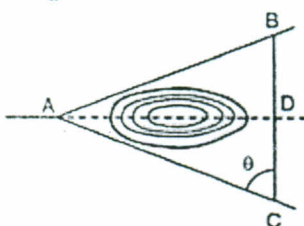
Q.7A Write the code of signals for Ranging during the chain surveying. 05

Q.7B A survey line BAC crosses a river, A and C being on near and distant banks respectively. Standing at D, a point 50 m measured perpendicularly to AB from A, the bearings of C and B are 320° and 230° respectively, AB being 25 m. Find the width of river. 05



OR

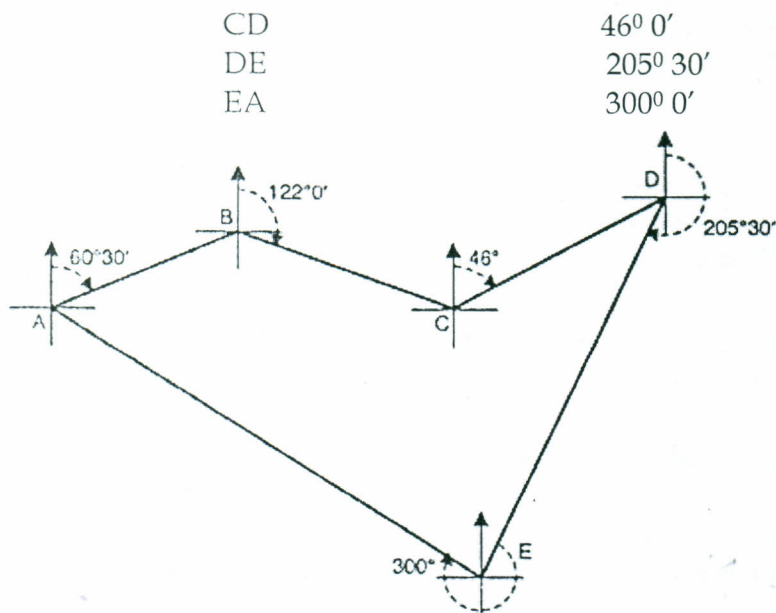
Q.7B In passing an obstacle in the form of a pond, stations A and D, on the main line, were taken on the opposite side of the pond. On the left of AD, a line AB, 200 m long was laid down and a second line AC, 250 m long, was ranged on the right of AD, the points B, and D and C being in the same straight line. BD and DC were then chained and found to be 125 m and 150 m respectively. Find the length of AD. 05



Q.8A Explain how contouring indicates the elevations directly? Write about contour interval, characteristics of contour, and the value of contour interval for various purposes like building site, town planning and location survey etc. 10

Q.9A The following bearings were observed with a compass. Calculate the interior angles: 10

Line	Fore Bearing
AB	$60^\circ 30'$
BC	$122^\circ 0'$



- Q.9B The following staff readings were observed successively with a level, the instrument having been moved after third, sixth, and eighth reading: 10
 2.228 ; 1.606 ; 0.988 ; 2.090 ; 2.864 ; 1.262 ; 0.602 ; 1.982 ; 1.044 ; 2.684
 meters .

Enter the above readings in a page of a level book and calculate the R.L. of points if the first reading was taken with a staff held on a bench mark of 432.384 m.

OR

- Q.9B It was require to ascertain the elevation of two points P and Q and a line of 10
 levels was run from P to Q. The levelling was then continued to a B.M. of 83.500, the reading obtained being as shown below: Obtain the R.L. of P and Q.

S.N.	B.S.	I.S.	F.S.	R.L.	Remarks
1	1.622				P
2	1.874		0.354		
3	2.032		1.780		
4		2.362			Q
5	0.984		1.122		
6	1.906		2.824		
7			2.036	83.500	B.M.