Code No: RR210104 **RR** **Set No. 2**

II B.Tech I Semester Examinations,November 2010
SURVEYING - I
Civil Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What is an Indian Tangent clinometer. What are the precautions to be taken while using it. Explain how it is used for determining the difference in elevations of points. [8]
   (b) The clinometer reading from A to a station B was -0.057. The distance AB as scaled from the plan was 2850m and the correction for curvature and refrection added to the height of the plane table was 3.10m. Calculate the reduced level of the station B if the reduced level of A was 250.35m. [8]

2. (a) State and explain three-point problem in plane table surveying? How does one solve it? When does the solution become impossible? [8]
   (b) Explain plane table traversing method with the aid of neat sketches. [8]

3. (a) What are the different methods of locating contours. Under what circumstances these methods are adopted. Explain direct method of locating contours. [8]
   (b) What do you mean by contour gradient? Explain the method of locating contour gradient in detail. [8]

4. (a) The following offsets were taken from a chain line to a hedge. [8]

Distance (m)	0	8	16	24	32	48	64	88	112
Offset (m)	3.76	4.32	5.44	4.88	3.84	3.36	3.00	2.52	1.84

   Calculate the area in square metres included between the chain line, the hedge and the end offsets by Trapezoidal Rule and Simpson's Rule.
   (b) The following table gives the corrected latitudes and departures (in metres) of the sides of a closed traverse PQRS. Compute its area by co-ordinates method. [8]

	Latitude		Departure	
Side	N	S	E	W
PQ	128		9	
QR	15		258	
RS		143	9	
SP	0			276

5. (a) Write short notes on benchmarks, profile leveling and the sensitivity of a bubble tube. [8]

(b) The following is an extract of a page from a level - book in which some entries were missing. The missing entries are marked (x). Calculate the missing entries and complete all the checks. [8]

Station	BS	IS	FS	Rise	Fall	RL	Remarks
1	2.285					232.460	
2	1.650		(X)	0.020			BM 1
3		2.185			(X)		
4	(X)		1.960	(X)			
5	2.560		1.925		0.300	232.255	Mb 2
6		(X)	(X)				
7	1.690		(X)	0.340			
8	2.865		2.120		(X)	233.425	BM 3
9			(X)	(X)			

6. (a) The true bearing of a tower observed from a station A is $350^0 30'$ and the magnetic bearing of the tower is $2^0 30'$. The back bearing of the line AB when measured with a prismatic compass was found to be $330^0 30'$. What is the true bearing of the line AB? [8]

(b) Explain the Bow ditch rule for adjusting a compass traverse, with neat sketches. [8]

7. (a) Explain the methods of testing and adjusting of a chain. What are the prescribed tolerance limits? [8]

(b) If in a length of one chain along a slope, the ground rises 3m, find the angle of slope and the hypotenusal allowance per chain when it is [8]

i. 30m chain

ii. 20m chain

8. (a) Explain the detailed procedure of finding out the capacity of a reservoir. [8]

(b) Levels were taken at every 40 m along a piece of ground. The following observations were recorded. [8]

Distance (m) :	0	40	80	120	160	200
R.L.(m) :	105.0	114.2	123.6	128.0	130.2	125.6

A cutting is to be made for a line of uniform gradient through the first and the last point. Determine its gradient calculate the volume of excavation if the formation width is 8.0 m with side slopes in cutting being 1.5:1 and the natural ground slope being 10:1. The ground across the centre line is level.

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Code No: RR210104 **RR** **Set No. 4**

II B.Tech I Semester Examinations,November 2010
SURVEYING - I
Civil Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) State and explain three-point problem in plane table surveying? How does one solve it? When does the solution become impossible? [8]
   (b) Explain plane table traversing method with the aid of neat sketches. [8]
2. (a) What are the different methods of locating contours. Under what circumstances these methods are adopted. Explain direct method of locating contours. [8]
   (b) What do you mean by contour gradient? Explain the method of locating contour gradient in detail. [8]
3. (a) Write short notes on benchmarks, profile leveling and the sensitivity of a bubble tube. [8]
   (b) The following is an extract of a page from a level - book in which some entries were missing. The missing entries are marked (x). Calculate the missing entries and complete all the checks. [8]

Station	BS	IS	FS	Rise	Fall	RL	Remarks
1	2.285					232.460	
2	1.650		(X)	0.020			BM 1
3		2.185			(X)		
4	(X)		1.960	(X)			
5	2.560		1.925		0.300	232.255	Mb 2
6		(X)	(X)				
7	1.690		(X)	0.340			
8	2.865		2.120		(X)	233.425	BM 3
9			(X)	(X)			

4. (a) The following offsets were taken from a chain line to a hedge. [8]

Distance (m)	0	8	16	24	32	48	64	88	112
Offset (m)	3.76	4.32	5.44	4.88	3.84	3.36	3.00	2.52	1.84

   Calculate the area in square metres included between the chain line, the hedge and the end offsets by Trapezoidal Rule and Simpson's Rule.
   (b) The following table gives the corrected latitudes and departures (in metres) of the sides of a closed traverse PQRS. Compute its area by co-ordinates method.

Code No: RR210104 **RR** **Set No. 4**

[8]

	Latitude		Departure	
Side	N	S	E	W
PQ	128		9	
QR	15		258	
RS		143	9	
SP	0			276

5. (a) What is an Indian Tangent clinometer. What are the precautions to be taken while using it. Explain how it is used for determining the difference in elevations of points. [8]

   (b) The clinometer reading from A to a station B was -0.057. The distance AB as scaled from the plan was 2850m and the correction for curvature and refrection added to the height of the plane table was 3.10m. Calculate the reduced level of the station B if the reduced level of A was 250.35m. [8]

6. (a) The true bearing of a tower observed from a station A is $350^0 30'$ and the magnetic bearing of the tower is $2^0 30'$. The back bearing of the line AB when measured with a prismatic compass was found to be $330^0 30'$. What is the true bearing of the line AB? [8]

   (b) Explain the Bow ditch rule for adjusting a compass traverse, with neat sketches. [8]

7. (a) Explain the detailed procedure of finding out the capacity of a reservoir. [8]

   (b) Levels were taken at every 40 m along a piece of ground. The following observations were recorded. [8]

Distance (m) :	0	40	80	120	160	200
R.L.(m) :	105.0	114.2	123.6	128.0	130.2	125.6

   A cutting is to be made for a line of uniform gradient through the first and the last point. Determine its gradient calculate the volume of excavation if the formation width is 8.0 m with side slopes in cutting being 1.5:1 and the natural ground slope being 10:1. The ground across the centre line is level.

8. (a) Explain the methods of testing and adjusting of a chain. What are the prescribed tolerance limits? [8]

   (b) If in a length of one chain along a slope, the ground rises 3m, find the angle of slope and the hypotenusal allowance per chain when it is [8]

      i. 30m chain

      ii. 20m chain

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Code No: RR210104 **RR** **Set No. 1**

II B.Tech I Semester Examinations,November 2010
SURVEYING - I
Civil Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What are the different methods of locating contours. Under what circumstances these methods are adopted. Explain direct method of locating contours. [8]
   (b) What do you mean by contour gradient? Explain the method of locating contour gradient in detail. [8]
2. (a) The true bearing of a tower observed from a station A is $350^0 30'$ and the magnetic bearing of the tower is $2^0 30'$. The back bearing of the line AB when measured with a prismatic compass was found to be $330^0 30'$. What is the true bearing of the line AB? [8]
   (b) Explain the Bow ditch rule for adjusting a compass traverse, with neat sketches. [8]
3. (a) Write short notes on benchmarks, profile leveling and the sensitivity of a bubble tube. [8]
   (b) The following is an extract of a page from a level - book in which some entries were missing. The missing entries are marked (x). Calculate the missing entries and complete all the checks. [8]

Station	BS	IS	FS	Rise	Fall	RL	Remarks
1	2.285					232.460	
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5	2.560		1.925		0.300	232.255	Mb 2
6		(X)	(X)				
7	1.690		(X)	0.340			
8	2.865		2.120		(X)	233.425	BM 3
9			(X)	(X)			

4. (a) The following offsets were taken from a chain line to a hedge. [8]

Distance (m)	0	8	16	24	32	48	64	88	112
Offset (m)	3.76	4.32	5.44	4.88	3.84	3.36	3.00	2.52	1.84

Calculate the area in square metres included between the chain line, the hedge and the end offsets by Trapezoidal Rule and Simpson's Rule.

(b) The following table gives the corrected latitudes and departures (in metres) of the sides of a closed traverse PQRS. Compute its area by co-ordinates method. [8]

	Latitude		Departure	
Side	N	S	E	W
PQ	128		9	
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5. (a) Explain the detailed procedure of finding out the capacity of a reservoir. [8]

(b) Levels were taken at every 40 m along a piece of ground. The following observations were recorded. [8]

Distance (m) :	0	40	80	120	160	200
R.L.(m) :	105.0	114.2	123.6	128.0	130.2	125.6

A cutting is to be made for a line of uniform gradient through the first and the last point. Determine its gradient calculate the volume of excavation if the formation width is 8.0 m with side slopes in cutting being 1.5:1 and the natural ground slope being 10:1. The ground across the centre line is level.

6. (a) What is an Indian Tangent clinometer. What are the precautions to be taken while using it. Explain how it is used for determining the difference in elevations of points. [8]

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(b) Explain plane table traversing method with the aid of neat sketches. [8]

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Code No: RR210104 **RR** **Set No. 3**

II B.Tech I Semester Examinations,November 2010
SURVEYING - I
Civil Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) The true bearing of a tower observed from a station A is $350^0 30'$ and the magnetic bearing of the tower is $2^0 30'$. The back bearing of the line AB when measured with a prismatic compass was found to be $330^0 30'$. What is the true bearing of the line AB? [8]
   (b) Explain the Bow ditch rule for adjusting a compass traverse, with neat sketches. [8]

2. (a) Explain the detailed procedure of finding out the capacity of a reservoir. [8]
   (b) Levels were taken at every 40 m along a piece of ground. The following observations were recorded. [8]

Distance (m) :	0	40	80	120	160	200
R.L.(m) :	105.0	114.2	123.6	128.0	130.2	125.6

   A cutting is to be made for a line of uniform gradient through the first and the last point. Determine its gradient calculate the volume of excavation if the formation width is 8.0 m with side slopes in cutting being 1.5:1 and the natural ground slope being 10:1. The ground across the centre line is level.

3. (a) State and explain three-point problem in plane table surveying? How does one solve it? When does the solution become impossible? [8]
   (b) Explain plane table traversing method with the aid of neat sketches. [8]

4. (a) What is an Indian Tangent clinometer. What are the precautions to be taken while using it. Explain how it is used for determining the difference in elevations of points. [8]
   (b) The clinometer reading from A to a station B was -0.057. The distance AB as scaled from the plan was 2850m and the correction for curvature and refraction added to the height of the plane table was 3.10m. Calculate the reduced level of the station B if the reduced level of A was 250.35m. [8]

5. (a) Write short notes on benchmarks, profile leveling and the sensitivity of a bubble tube. [8]
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6		(X)	(X)				
7	1.690		(X)	0.340			
8	2.865		2.120		(X)	233.425	BM 3
9			(X)	(X)			

6. (a) What are the different methods of locating contours. Under what circumstances these methods are adopted. Explain direct method of locating contours. [8]

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   i. 30m chain
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RS		143	9	
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