**R07** 



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

Time: 3 hours

Code No: 07A30103

Max Marks: 80

[16]

### Answer any FIVE Questions All Questions carry equal marks \*\*\*\*

- 1. Draw a neat sketch of a vernier theodolite and explain the functions of the various parts? 16
- 2. (a) What are the common difficulties in setting out simple curves? Describe briefly the method employed in overcoming them?
  - (b) Define the following terms:
    - i. Point of Curvature
    - ii. Point of Tangency
    - iii. Mid-ordinate
    - iv. Point of compound curvature.
- 3. (a) What is mass diagram? How it is constructed and what are its uses?
  - (b) Calculate the side width and area of the cross-section of an embarkment with the following Specifications:

Formation width	=	20m		
Side slope	=	2to 1		
Centre- height	=	12m		
Transverse slope	=	10 to 1.	[6	5+10]

- 4. (a) A level was set up at a point C at a distance of 100m from A and 1000m from B. The staff reading on the staff kept at A was 0.445m and that on the staff held at B was 2.845. Find the true difference in elevations of A and B.
  - (b) The staff reading taken on a staff held at a distance of 80 m from the instrument with the bubble central was 1.455m. When the bubble is moved 6 divisions out of the centre, the staff reading observed is 1.487m. If the length of one division is 2 mm, find the radius of the curvature and the sensitivity of the tube. [8+8]
- (a) Write short note on random line method. 5.
  - (b) A main line of a survey crosses a river about 25 m wide. To find the gap in the line, stations A and B are established on the opposite banks of the river and a perpendicular AC, 60 m long is set out at A. If the bearings of AC and and CB are  $30^{0}$  and  $270^{0}$  respectively, and the chainage at A is 285.1 m, find the chainage at B. [6+10]
- 6. Describe in brief the working and salient features of a Wild Tachymat electronic total station? [16]

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# Set No. 2

- 7. (a) What considerations would you have while selecting survey stations and survey lines in a chain survey?
  - (b) Write a short note on the marking of survey stations and referencing. [8+8]
- 8. (a) Discuss the subtense bar method of tacheometric surveying. What are its advantages?
  - (b) Following readings were taken by a tacheometer from a station. The staff was kept vertical. The value of constant of tacheometer is 100 and is fitted with anallatic lens. Find out the horizontal distance from A to B and the reduced level of B: [16]

Station	Staff Station	Vertical angle	Hair reading	Remarks
А	B.M	-6 <sup>0</sup> 00'	1.100, 1.153, 2.060	R.L of
				B.M = 976.0m
	В	$+8^{0}00^{\circ}$	0.982, 1.085, 1.188	

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## Set No. 4

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

Time: 3 hours

Code No: 07A30103

Max Marks: 80

### Answer any FIVE Questions All Questions carry equal marks \*\*\*\*\*

- (a) A level was set up at a point C at a distance of 100m from A and 1000m from B. The staff reading on the staff kept at A was 0.445m and that on the staff held at B was 2.845. Find the true difference in elevations of A and B.
  - (b) The staff reading taken on a staff held at a distance of 80 m from the instrument with the bubble central was 1.455m. When the bubble is moved 6 divisions out of the centre, the staff reading observed is 1.487m. If the length of one division is 2 mm, find the radius of the curvature and the sensitivity of the tube. [8+8]
- 2. (a) What considerations would you have while selecting survey stations and survey lines in a chain survey?
  - (b) Write a short note on the marking of survey stations and referencing. [8+8]
- 3. Draw a neat sketch of a vernier theodolite and explain the functions of the various parts? [16]
- 4. Describe in brief the working and salient features of a Wild Tachymat electronic total station? [16]
- 5. (a) Write short note on random line method.
  - (b) A main line of a survey crosses a river about 25 m wide. To find the gap in the line, stations A and B are established on the opposite banks of the river and a perpendicular AC, 60 m long is set out at A. If the bearings of AC and and CB are  $30^{0}$  and  $270^{0}$  respectively, and the chainage at A is 285.1 m, find the chainage at B. [6+10]
- 6. (a) What is mass diagram? How it is constructed and what are its uses?
  - (b) Calculate the side width and area of the cross-section of an embarkment with the following Specifications:

Formation width	=	20m	
Side slope	—	2to 1	
Centre- height	—	12m	
Transverse slope	=	10 to 1.	[6+10]

- 7. (a) What are the common difficulties in setting out simple curves? Describe briefly the method employed in overcoming them?
  - (b) Define the following terms:

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### Set No. 4

- i. Point of Curvature
- ii. Point of Tangency
- iii. Mid-ordinate
- iv. Point of compound curvature.

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- 8. (a) Discuss the subtense bar method of tacheometric surveying. What are its advantages?
  - (b) Following readings were taken by a tacheometer from a station. The staff was kept vertical. The value of constant of tacheometer is 100 and is fitted with anallatic lens. Find out the horizontal distance from A to B and the reduced level of B: [16]

Station	Staff Station	Vertical angle	Hair reading Remarks
А	B.M	$-6^{0}00^{\circ}$	1.100, 1.153, 2.060 R.L of
			B.M = 976.0m
	В	$+8^{0}00'$	0.982, 1.085, 1.188

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# Set No. 1

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

Time: 3 hours

Code No: 07A30103

Max Marks: 80

### Answer any FIVE Questions All Questions carry equal marks \*\*\*\*\*

- (a) A level was set up at a point C at a distance of 100m from A and 1000m from B. The staff reading on the staff kept at A was 0.445m and that on the staff held at B was 2.845. Find the true difference in elevations of A and B.
  - (b) The staff reading taken on a staff held at a distance of 80 m from the instrument with the bubble central was 1.455m. When the bubble is moved 6 divisions out of the centre, the staff reading observed is 1.487m. If the length of one division is 2 mm, find the radius of the curvature and the sensitivity of the tube. [8+8]
- 2. Describe in brief the working and salient features of a Wild Tachymat electronic total station? [16]
- 3. (a) Write short note on random line method.
  - (b) A main line of a survey crosses a river about 25 m wide. To find the gap in the line, stations A and B are established on the opposite banks of the river and a perpendicular AC, 60 m long is set out at A. If the bearings of AC and and CB are  $30^{\circ}$  and  $270^{\circ}$  respectively, and the chainage at A is 285.1 m, find the chainage at B. [6+10]
- 4. (a) Discuss the subtense bar method of tacheometric surveying. What are its advantages?
  - (b) Following readings were taken by a tacheometer from a station. The staff was kept vertical. The value of constant of tacheometer is 100 and is fitted with anallatic lens. Find out the horizontal distance from A to B and the reduced level of B: [16]

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- 5. (a) What considerations would you have while selecting survey stations and survey lines in a chain survey?
  - (b) Write a short note on the marking of survey stations and referencing. [8+8]
- 6. (a) What is mass diagram? How it is constructed and what are its uses?
  - (b) Calculate the side width and area of the cross-section of an embarkment with the following Specifications:

# Code No: 07A30103 R07 Set No. 1

Formation width	=	20m	
Side slope	=	2to 1	
Centre- height	=	12m	
Transverse slope	=	10 to 1.	[6+10]

- 7. Draw a neat sketch of a vernier theodolite and explain the functions of the various parts? [16]
- 8. (a) What are the common difficulties in setting out simple curves? Describe briefly the method employed in overcoming them?
  - (b) Define the following terms:
    - i. Point of Curvature
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    - iv. Point of compound curvature.

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**R07** 



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

Time: 3 hours

Code No: 07A30103

Max Marks: 80

### Answer any FIVE Questions All Questions carry equal marks \*\*\*\*\*

- (a) A level was set up at a point C at a distance of 100m from A and 1000m from B. The staff reading on the staff kept at A was 0.445m and that on the staff held at B was 2.845. Find the true difference in elevations of A and B.
  - (b) The staff reading taken on a staff held at a distance of 80 m from the instrument with the bubble central was 1.455m. When the bubble is moved 6 divisions out of the centre, the staff reading observed is 1.487m. If the length of one division is 2 mm, find the radius of the curvature and the sensitivity of the tube. [8+8]
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- 6. (a) Write short note on random line method.
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# Set No. 3

- 7. (a) Discuss the subtense bar method of tacheometric surveying. What are its advantages?
  - (b) Following readings were taken by a tacheometer from a station. The staff was kept vertical. The value of constant of tacheometer is 100 and is fitted with anallatic lens. Find out the horizontal distance from A to B and the reduced level of B: [16]

Station	Staff Station	Vertical angle	Hair reading	Remarks
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	В	$+8^{0}00'$	0.982, 1.085, 1.188	

- 8. (a) What considerations would you have while selecting survey stations and survey lines in a chain survey?
  - (b) Write a short note on the marking of survey stations and referencing. [8+8]

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