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Reg No.:

Name:

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Third Semester B. Tech Degree (S,FE) Examination December 2020 (2015 Scheme

Course Code: CE207 Course Name: SURVEYING

Max. Marks: 100

PART A

Duration: 3 Hours

Pages: 3

Answer any two full questions, each carries 15 marks Marks

- a) What is local attraction? How can you detect and correct it if the bearings are (7)
 - affected by local attraction.
- b) The following bearings were observed on a compass traversing. At what stations (8) do you suspect local attraction? Find the corrected bearings.

Line	FB	BB
AB	44°40'	225°20'
BC	96°20'	274°18'
CD	30°40'	212°02'
DA	320°12'	140°12'

a) Explain principle of resection with a sketch.

b) The following is the page of a level field book. Fill the missing readings and (8) calculate the levels of the stations and apply usual checks

Station	B.S	I.S	F.S	Rise	Fall	RL	Remarks
1	3.250						
2	1.880				0.600	<u></u>	
3	7	2.250				<u> </u>	
4			1.920				
5		2.540			0.015		
6				1.000			
7	1.175		2.115			225.305	
8		1.625	4				
9			1.895		0.270		
10			1.255		0.750	12	
Sum	11.450						

E

1

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(7)

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3	a)	Explain profile levelling with a sketch.	(7)
	b)	Explain any two methods of contouring? Illustrate with sketches.	(8)
		PART B	
		Answer any two full questions, each carries 15 marks	
4	a)	Explain methods to calculate area using	(7)
		i) latitude and meridian distance and	
		ii) latitude and double meridian distance.	
4	b)	From an eccentric station S, 12 m to the west of main station B, the following	(8)
1		angles were measured. $\langle BSC = 72^{\circ}20'28'', \langle CSA = 52^{\circ}30'20''$. The stations S	
~		and C are to the opposite sides of the line AB. Calculate the correct angle ABC if	
		the lengths of AB and BC are 520 and 480 m respectively.	
5	a)	What are the uses of Mass haul diagram? How do you construct it?	(7)
	b)	A railway embankment is 16 m wide at formation level, with side slope of 2 to 1.	(8)
		Assuming the ground to be level transverse to the centre line, calculate the	
		volume contained in a length of 100 m, the centre heights at 20 m intervals being	
		in m : 2.0,4.5, 4.0,3.5,2.5, 1.5 m respectively. Use trapezoidal rule.	
6	a)	Explain different triangulation figures with sketches.	(7)
	b)	Distance between two proposed stations A and B in a triangulation is 110 km.	(8)
		Elevation of station A is 300 m while that of B is 600 m. There is point C	
		between A and B at a distance 50 km from A and is having an elevation of 238	
		m. Ascertain whether A and B are intervisible. If not, find the minimum height of	
3		tower required at B so that B is visible from A with a minimum clearance of 2.5	
		m above the surface of the ground.	
		PART C	
7		Answer any two full questions, each carries 20 marks.	(10)
/	a)	State any five laws of weights of observation with examples.	(10)
	D)	The angles of a triangle A,B,C are:	(10)
		$A = / / 14^{\circ} 10^{\circ}$ weight 4	
		B=49°40'35" weight 3	

Find the most probable value of the method angles A, B and C using normal equation.

weight 2

C=53°04'52"

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8 a)	What is the principle of total station? What are the advantages?	(6)
b)	(i) Celestial sphere	(14)
	(ii) Celestial horizon	
	(iii) Observers meridian	
•	(iv) Vertical circle	
	(v) Prime vertical	
	(vi) Hour circle	
	(vii) Declination circle	
9 a)	Explain distomat.	(6)
• b)	Explain with an example, the method of normal equation to find	unknown (14)