UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2012/2013

COURSE NAME	:	LAND SURVEY FOR CONSTRUCTION
COURSE CODE	:	BPD 2023/BPD 20203
PROGRAMME	:	2 BPC
EXAMINATION DATE	:	JUNE 2013
DURATION	:	3 HOURS
INSTRUCTION	:	1. ANSWER **ALL** QUESTIONS 2. ATTACH **APPENDIX I, II III,IV AND V** WITH YOUR ANSWER BOOKLET

THIS QUESTION PAPER CONSISTS OF **EIGHT (8)** PAGES

Q1 (a) Describe steps for temporary adjustment of Total Station.

(6 marks)

(b) Based on the observed data in the attached Fieldwork Form 1 at **Appendix I**, calculate the average and final bearing. (Use Fieldwork Form 1 in Appendix I for answer).

(14 marks)

Q2 Traverse is a method in the field of surveying to establish control networks.It is also used in geodesy. Traverse networks involve placing survey stations along a line or path of travel, and then using the previously surveyed points as a base for observing the next point.

(a) Describe steps in traversing.

(6 marks)

(b) Based on the data from the attached Fieldwork Form 2 at **Appendix II**, calculate the collimation line height and reduced level: (Use Fieldwork Form 2 in **Appendix II** for answers).

(14 marks)

Q3 Based on the data from the attached Fieldwork Form 3 at **Appendix III**, calculate the following values. (Use Fieldwork Form 3 in **Appendix III** for answers (a), (b) and (c)).

(a) Latit & Dipat and Positional Misclosure

(8 marks)

(b) Latit & Dipat (Corrected)

(7 marks)

(a) Width

(5 marks)

Q4 (a) Explain the fieldwork of levelling work in transferring benchmark value to other points on earth.

(6 marks)

(b) Based on the observed data in attached Fieldwork Form 4 at **Appendix IV**, calculate the value of 'A' and other related data using the Rise & Fall method. (Use Fieldwork Form 4 in **Appendix IV** to answer question).

(14 marks)

Q5 (a) Based on **Figure Q5a** in **Appendix V**, calculate the following values:

(i) Coordinate for A1 and A3

(4 marks)

(ii) Angle of deflection for highway construction for the circular curve at 20m interval stations

(10 marks)

(b) Explain the application of land survey in road construction, building and tunnelling.

(6 marks)

APPENDIX I

FINAL EXAMINATION

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(FIELDWORK FORM 1)

	Bearing						
Stn	P Ki	P Ka	Average Bearing		Final Bearing		
4	20 20 00	200 22 00					
1							
2	282 41 10	102 41 50					
1	102 41 50	282 42 40					
2							
3	0 12 10	180 11 10					
2	180 11 10	0 11 10					
3							
4	113 09 00	293 09 40					
3	293 09 40	113 10 30					
4							
1	200 23 30	20 20 00					

APPENDIX II

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(FIELDWORK FORM 2)

PB (Backsight)	PA (Intermediatesight)	PH (Frontsight)	TGK (Collimation Height)	Aras Laras (Reduced Level)
1.790				(TBM1) 10.700
	1.760			
	1.200			
	0.930			
	0.670			
	0.360			
1.440		1.980		
2.000		1.240		
1.200		0.900		
		1.480		(TBM2) 11.530

APPENDIX III

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(FIELDWORK FORM 3)

Line	Final Bearing	Distance	Latit		Dipat					
			N	S	E	W				
2-3	302 11 37	175.029								
3-1	70 39 00	188.758								
1-2	190 50 00	158.709								

APPENDIX IV

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(FIELDWORK FORM 4)

PB (Backsight)	PA (Intermediatesight)	PH (Frontsight)	NAIK (Rise)	TURUN (Fall)	Aras Laras (Reduced Level)
1.280					(TBM1)11.510
	1.260				
1.130		1.340			
	1.170				
1.350		1.210			
	1.310				
	1.280				
	1.390				
0.850		1.590			
	1.050				
	'A'				
	1.280				
		1.270			(TBM2)10.710

APPENDIX V

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$\Delta = 12^\circ 51'$
R = 400m
PI = 0 + 241.782

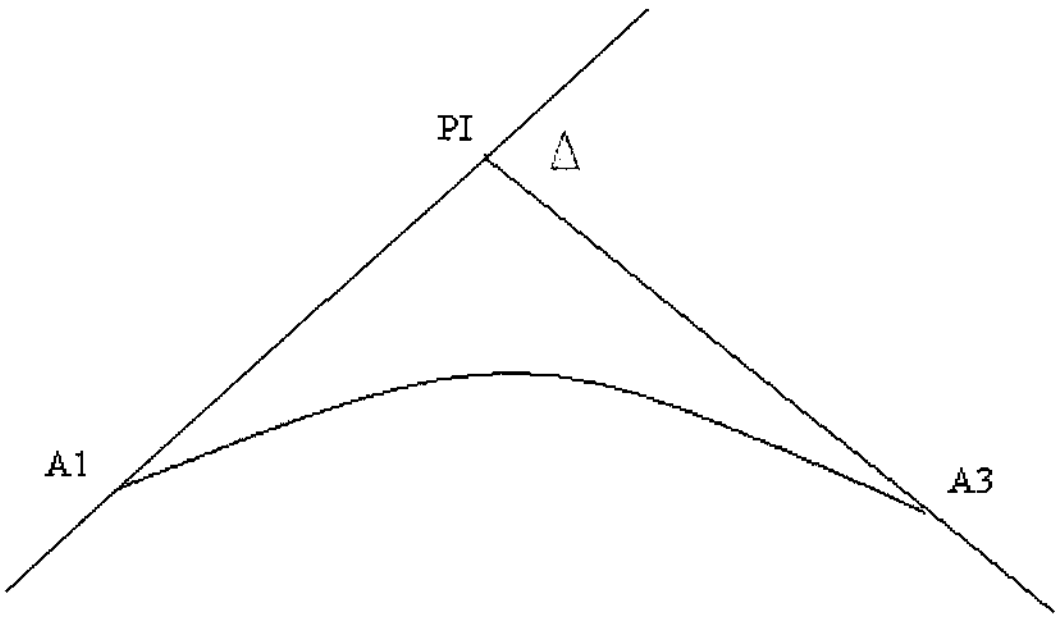

Figure : Circular Curve

FIGURE Q5a

-END OF QUESTION-