P2803

[4958]-102 T.E. (Civil) ADVANCED SURVEYING (2008 Pattern) (Semester - I)

Time : 3 Hours] Instructions to the candidates:

- 1) Solve Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6 from section I and Q. 7 or Q. 8, Q. 9 or Q. 10, Q. 11 or Q. 12 from section II
- 2) Answers to the two sections should be written in separate answer books.
- 3) Figures to the right indicate full marks.

SECTION - I

- *Q1*) a) Differentiate between Triangulation and Traversing and Trilateration. [8]
 - b) What are the various potential error sources that affect the GPS signals?[8]

OR

- Q2) a) Define Geodetic Surveying? What factors are to be considered while selecting a best triangulation figure or system? [8]
 - b) Explain with neat sketches, commonly used layouts of triangulation systems. [8]
- Q3) a) Explain clearly what is meant by side equation? How would you adjust a geodetic quadrilateral without central station? [8]
 - b) Explain the following terms;
 - i) True Value ii) True Error
 - iii) Most Probable Value iv) Residual Error

OR

- Q4) a) What do you mean by weight of an observation? State the rules of assigning weight to the field observations.[8]
 - b) What is spherical excess? What are the methods of computing the sides of a spherical triangle? Explain any one method. [8]

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SEAT No. :

[Total No. of Pages :3

[Max. Marks:100

[8]

Q5) a) The following reciprocal observations were made from two points P & Q;

Horizontal distance between P & Q = 33128 mAngle of Depression of Q at P = 6' 20"Angle of Depression of P at Q = 8' 10"Height of Signal at P = 4.87 mHeight of Signal at Q = 4.07 mHeight of Instrument at P = 1.27 mHeight of Instrument at Q = 1.34 mCalculate(10)i) The R.L. of Q, if that of P is 1248.65 m &

ii) The average co-efficient of refraction at the time of observations.

Take RSin 1" = 30.88 m.

b) Explain with a neat sketch how the alignment of tunnel is transferred from surface to the underground. [8]

OR

Q6) a) Correct the observed altitude for the height of signal, refraction and curvature, from the following data; [10]

Observed altitude = $+2^{\circ} 48$ ' 39"

Height of Instrument = 1.12 m

Height of Signal = 4.87 m

Horizontal distance = 5112 m

Coefficient of Refraction = 0.07 m

RSin 1" = 30.88 m.

b) Describe in brief the location survey of a long bridge. [8]

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SECTION - II

a)	Define Relief displacement. Derive an expression for displacement due to ground relief. [8]						
b)		Define the following terms;					
	i)	Principal point	nt	i	ii)	Scale	
	iii)	Air base		i	iv)	Overlap	
				OR			
a)	Explain in detail the flight planning for an area.						
b)	Differentiate between aerial photograph and Map.						[8]
a)	Explain with neat sketches the terms Spectral Signature and Atmospheric Windows. [6]						
b)	Explain what are the elements of image interpretation.						[6]
c)	Write a note on applications of remote sensing.						[6]
				OR			
) a)	Explain with neat sketches the geo-stationary and sun- Satellites.					-synchronous [6]	
b)	Explain Spectral and Radiometric Resolution.						[6]
c)	What are the capabilities or functions available in G.I.S.						[6]
)a)	Derive an expression for solving three point problem by analytical						ytical method. [8]
b)	What is Index Error? How it is determined?						[8]
	OR						
) a)	What is meant by Sounding? Discuss various methods of taking sounding [8]						
b)	Explain the phenomenon of tides and different methods of me the tide level.						of measuring [8]
	 b) a) b) b) c) a) b) c) b) b) b) c) 	 to gravents b) Definition ii) iii) a) Explored b) Different a) Explored b) Explored c) Write b) Explored b) What b) What b) Explored b) Explored c) What b) Explored c) What c) What c) What c) What c) What c) Explored c) What c) Explored c) What c) What c) What c) Explored c) What c) What c) What c) Explored 	 to ground relief. b) Define the followini i) Principal poini ii) Air base a) Explain in detail the b) Differentiate between the second se	 to ground relief. b) Define the following terms; i) Principal point ii) Air base a) Explain in detail the flight pl b) Differentiate between aerial a) Explain with neat sketches the Windows. b) Explain what are the element c) Write a note on applications iii) Explain Spectral and Radion c) What are the capabilities or i) Derive an expression for solve b) What is Index Error? How i i) a) What is meant by Sounding? b) Explain the phenomenon o 	 to ground relief. b) Define the following terms; i) Principal point ii) Air base OR a) Explain in detail the flight planning f b) Differentiate between aerial photogr a) Explain with neat sketches the terms Windows. b) Explain what are the elements of imate of the elements of imate of Write a note on applications of removed of the elements of the elem	 to ground relief. b) Define the following terms; i) Principal point ii) iii) Air base iv) OR a) Explain in detail the flight planning for a b) Differentiate between aerial photograph a) Explain with neat sketches the terms Spe Windows. b) Explain what are the elements of image i c) Write a note on applications of remote s OR (a) Explain with neat sketches the geo-st Satellites. (b) Explain Spectral and Radiometric Resolic) (c) What are the capabilities or functions avoid on the capabilities or function on the capabilities or function on the capab	 to ground relief. b) Define the following terms; i) Principal point ii) Scale iii) Air base iv) Overlap OR a) Explain in detail the flight planning for an area. b) Differentiate between aerial photograph and Map. a) Explain with neat sketches the terms Spectral Signature and Windows. b) Explain what are the elements of image interpretation. c) Write a note on applications of remote sensing. OR ()a) Explain with neat sketches the geo-stationary and sun Satellites. b) Explain Spectral and Radiometric Resolution. c) What are the capabilities or functions available in GI.S. ()a) Derive an expression for solving three point problem by anal b) What is Index Error? How it is determined? OR ()a) What is meant by Sounding? Discuss various methods of tal b) Explain the phenomenon of tides and different methods

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