Kafrelsheikh University
Faculty of Engineering
Department of Civil Engineering
Year:2020-2021
Name : D.MagdaFarhan

Date :16-6-2021
Time allowed : 3h
Mark : 70 Mark
Subject: Geodesy and Satellite Surveying
Academic Number :CES4234

This exam measures the following (LO's): A6, A10, B1

Question (1) (21) Mark

a- What are the geoid and ellipsoid and the relationship between them. **(5 Mark)**

b - Geographic coordinates of the point A are (42° 41′N , 29° 53′ E ,600m) .Compute the Cartesian coordinates if the Radius of the sphere 6370 km . **(8 Mark)**

c- The Cartesian coordinates) (3562.48, 2897.22, 1789.75) km .Compute the Geographic coordinates if the Radius of the sphere 6370 km . **(8 Mark)**

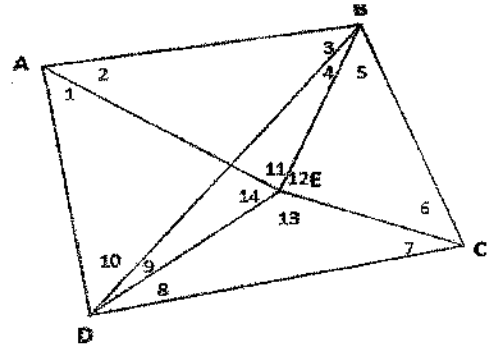
Question (2) (21) Mark

a- Define the Global Positioning System (GPS) technique and its applications. **(6 Mark)**

b- Explain in detail types of geodetic networks. **(5Mark)**

c- The field abstract for a triangulation scheme established for a small construction site is shown in figure. Required: -Estimate the numbers and types of conditions by two methods. **(10Mark)**

Required: -Estimate the numbers and types of conditions by two methods. And write the conditions.



Question (3) (14) Mark

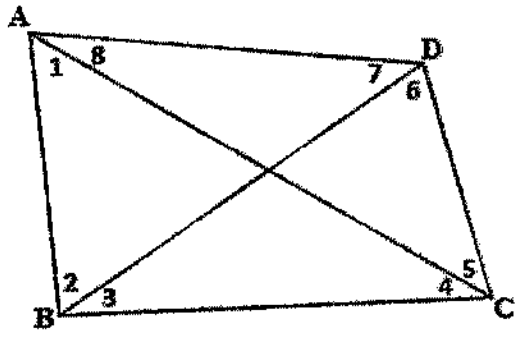
a- Given a spherical triangle ABC, where a =165°, b=100° , c=75° .Solve the triangle to find it unknown three elements. **(7 Mark)**

b- In a spherical triangle ABC , if a=123.8° ,C=67.2° and c=90°. Calculate A, b and B. **(7 Mark)**

Question (4) (14)

The field abstract for a triangulation scheme established for a small construction site is shown in figure. Adjust the network by Equal shift method using the following data.

(14 Mark)



Angle	°	'	"
1	37	10	32.6
2	48	26	09.1
3	50	21	54.6
4	44	01	23.2
5	30	56	45.3
6	54	39	48.8
7	63	56	14.5
8	30	27	07.2

Good Luck

D. Magda Farhan