



University of Technology
Building and Construction Eng. Dept.
Final Exam 2016

Subject: GIS
Division: Geomatics
Examiner: Dr.abdulrazzak T. Zaboon
A.L. Hameed S. Ismael

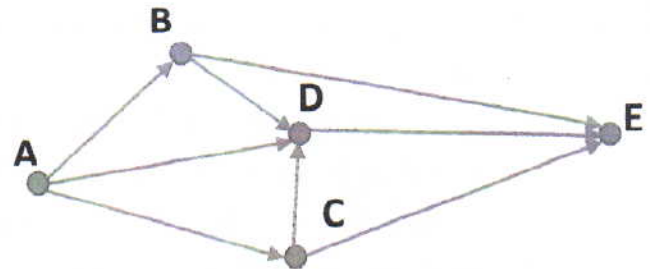
Class: 4th class
Time: 3 hours



Note: Answer Four Questions only

Q1: - Find out the best route dependence on consuming time to go from location (A) to location (E)? [25 marks]

OID	Time(s) / length (km)	Delay time(s)	length (km)
AB	400	75	220
BE	450	100	400
AC	300	120	210
CE	200	100	500
CD	100	90	180
DE	150	30	220
BD	200	60	160
AD	100	70	100



Q2: - A) Explain and List the difference between raster and vector data models used to analysis and represent maps in an ArcGIS? [15 marks]

B) Answer the following by True (T) or False (F): If the answer false writes the correct answer briefly? [10 marks]

1. The spatial reference information Storage in JPG image format?
2. Shape file have Three Type Point, line and polygon?
3. When created a new shapefile and digitized three new line The length of each line is automatically added to the feature attribute table?
4. There is one type of Geodatabase is Personal Geodatabase?
5. We can create feature class inside Geodatabase and Dataset?

Q3: - A) What are the Global map & local map Explain in details? [10 marks]

B) There are two methods of interpolation What are they, explain in details and list the major local Model?

[15 marks]

Q4: - choose the right answer and Explain the other terms? [25 marks]

1. An appropriate symbology for showing the population for all the counties in the world would be ?
a) Text Color b) Graduated color c) Single symbol d) Unique values
2. What method can be used to customize the appearance of features by storing symbol information with the feature geometry inside feature classes:
a) Cartographic Layouts b) Mapping Commons
c) Cartographic Representations d) Cartographic Animation
3. ArcCatalog application CANNOT be used to organize and edit which of the following:
a) Geoprocessing toolboxes and Python scripts
b) Map documents, c) Raster files d) Geodatabases
e) None of the Above
4. Map documents used in ArcMap contain the specifications for the map layers, the page layout, and all other map properties. A Map Document has the following extension :
a) (.shp) b) (.map) c) (.mxd) d) (.e00) e) (.lyr)
5. A large scale topographic map showing locations of minor roads, water wells, and three proposed project areas could be captured in a GIS as:
a) Lines, points, and polygons b) Raster, vector, and TINs
c) Lines, points, and cells d) Vectors, Hierarchical dots, and polygons

Q5: - A) What are the WEB GIS Explain in details and list What Web GIS can be perform?

[15 marks]

B) What are the WEB GIS Advantages and disadvantages in Server side application?

[10 marks]



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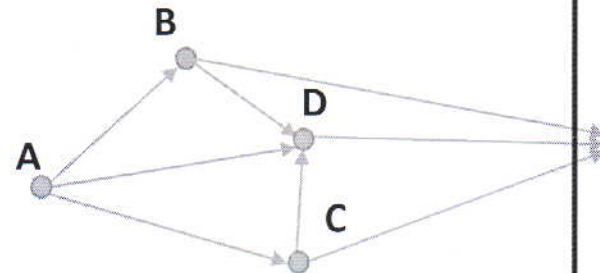
Ex. Dr. Zak T. Zaboon

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Solution

	A	B	C	D	E	F	G
1	OID	Time(s) / length (km)	Delay time(s)	length (km)	total time		
2	AB	400	75	220	88075		
3	BE	450	100	400	180100		
4	AC	300	120	210	63120		
5	CE	200	100	500	100100		
6	CD	100	90	180	18090		
7	DE	150	30	220	33030		
8	BD	200	60	160	32060		
9	AD	100	70	100	10070		
10							
11							
12	ABE	268175					
13	ADE	43100	BEST Route				
14	ACE	163220					
15	ABDE	153165					
16	ACDE	114240					
17							
18							

Q2: - A) Explain and List the difference between raster and vector data models used to analysis and represent maps in an ArcGIS? [15 marks]



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Dr. Zakk T. Zaboon

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B) Answer the following by True (T) or False (F): If the answer false writes the correct answer briefly? [10 marks]

1. The spatial reference information Storage in JPG image format? F(in TIF)
2. Shape file have Three Type Point, line and polygon? T
3. When created a new shapefile and digitized three new line The length of each line is automatically added to the feature attribute table? F (add manually)
4. There is one type of Geodatabase is Personal Geodatabase? F (three types)
5. We can create feature class inside Geodatabase and Dataset? T

Q3:- A) What are the Global map & local map Explain in details?

[10 marks]

B) There are two methods of interpolation What are they, explain in details and list the major local Model?

- Global method
- Local method

Global methods make predictions using the entire dataset. On the other hand local methods make predictions using the measured points within neighborhoods (smaller spatial areas within the larger study area). Global methods usually create smooth surfaces, but they can be very sensitive to outliers (values that are significantly different as compared to the other values). Compared with global methods, local methods yield less smooth surfaces and are not sensitive to outliers as their effects do not influence the entire interpolated surface, but only local regions/parts of the interpolated surface

1. Inverse Distance Weighting (IDW)
2. Splines

[15 marks]

Q4: - choose the right answer and Explain the other terms? [25 marks]

1. An appropriate symbology for showing the population for all the counties in the world would be ?
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Q5: - A) What are the WEB GIS Explain in details and list What Web GIS can be perform?

[15 marks]

1. **Visualization and Querying:** GIS data and results are mostly represented as maps. Every feature on map has certain information associated with it. On querying one may come to know the location of a particular feature and the properties associated with it.
2. **Collection of Geographical Information:** Various organisations collect spatial information on web. One way of doing this is by developing an application which is opened to public where public is asked for feeding in the spatial information. The Wikimapia website which has more than 18 million places marked by the registered as well as anonymous internet users is an example of such kind. Use of mobile GIS where field crew collects information, validate it and post the updated information to the server and database kept in the office is another way of collecting geographical information.
3. **Dissemination of geospatial information:** A lot of geospatial information is distributed through the WebGIS platform. For example, India-WRIS is a web based platform through which one can visualize as well as download the geospatial data related to water resources of India. In a similar manner various organisations have been disseminating the data through such geospatial portals.

B) What are the WEB GIS Advantages and disadvantages in Server side application?

[10 marks]

Advantages:

- On a high performance server, users can access large files that are difficult to be transferred across the internet and which can't be processed locally on the client
- One can insure the use of data in a correct manner and can restrict the user to perform limited functions

Disadvantages:

- Every request no matter how small must be processed and returned to the server which is then passed to the client through internet.
- The network traffic on internet between the server and client due to transfer of large files affects the performance.