CS-4040/CS5132/CS6001

February 25, 2023

Course Instructor

Prof. Dr Shahzad Sarfraz

Instructions:
1. Attempt all questions and share your working in **PDF as per the given order along with dataset generated during exam**.
2. The **exam is lab based** without discussion. On each discussion invigilator is authorized to recommend deduction of TEN Marks.
3. In case you shared any part of the answer with others; your exam will be cancelled.
4. **Use only your own devices such as Laptop, Computer, etc. If you do not have your own, then you are not allowed to get from others.**
5. Read the questions carefully for clarity of context and understanding of meaning and make assumptions wherever required, for neither the invigilator will address your queries, nor the teacher/examiner will come to the examination hall for any assistance.
6. **Mobile Phones/Smart Watches/Data Bundles devices are not allowed.**
7. Submit your working in **PDF** document. The document name must be like **Roll_No_Name_final.pdf**

	Q-1	Q-2	Q-3	Total
Total Marks	25	15	20	**60**
Marks Obtained				

Vetted By: _____ **Signature:** _____

You have been provided with the following datasets.

i.   Image for Digitizing with .jpg extension
ii. Iqbal Town Shapefile
iii. Model Town Shapefile
iv. CSV file consisting of Points Data for Digitizing
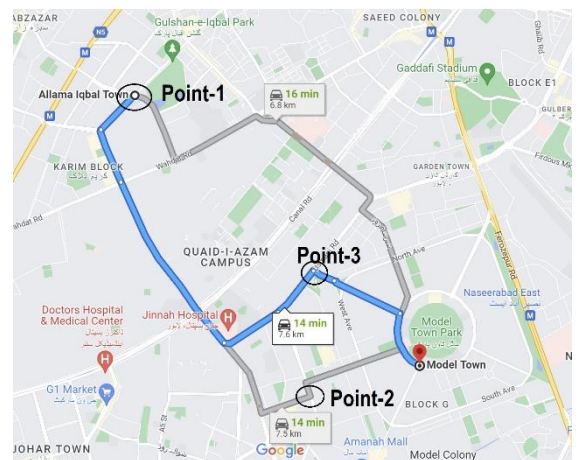v.   FAST-NUCES students' locations across Pakistan

Model_Town

■ COMMERCIAL	■ PUBLIC BUILDING
■ COMMERCIAL/ RESIDENTIAL	■ QUATERS
■ EDUCATIONAL	■ RELEGIOUS; RELIGIOUS
■ GRIDSTATION	■ RESIDENTIAL
■ KACHIABADI; KATCHI ABADI/COMMERCIAL	■ UNKNOWNPARCEL
■ PARK; RECREATIONAL	■ VACANT

Considering above dataset perform the following tasks.

Q.1. Working on Shapefiles.   (25 marks)

i.   Convert and display the dataset of Model Town based-on *Land use* field.
ii. Filter the plot size of 3 Marla and 3 Kanal which falls in the commercial area.
iii. Select a suitable commercial land in the Model Town area for FAST-Campus and store it in the attribute table. Display the selected location on the map and label it.
iv. Identify the educational places in the Model Town using attribute query.
v.   Export your results of the last query in pdf format and your output must have all components of the map.

Q.2. Importing Data to ArcMap using FAST-NUCES Students CSV file.   (15 marks)

i.   Convert the non-spatial data sets of FAST-NUCES Students into shapefile.
ii. Plot the point data set based on the online learning method used by students during COVID-19.
iii. Extract and display students point those belongs to Model Town.

Q.3. Geo-referencing and Digitizing   (20 marks)

i.   Add the jpg file "Image for Digitizing" and Geo-refer the image using points marked as circles. Lat/Long of these points are given in the CSV file.
ii. Add the shapefile of Model Town and Iqbal Town. Create a new shapefile of the road and connect both towns using suitable roads.
iii. Also create the point dataset and mark the two famous hospital names and store its attribute in the dbf file.
iv. Draw the polygon of which is surrounded by both towns.
v.   Convert the roads into Google Earth readable files.

Submit your complete working/screenshots through PDF along necessary supporting files.