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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2021/2022**

COURSE NAME : GEOGRAPHICAL INFORMATION
SYSTEM FOR CIVIL ENGINEERING

COURSE CODE : BFG 40803

PROGRAMME CODE : BFF

EXAMINATION DATE : JANUARY / FEBRUARY 2022

DURATION : 3 HOURS

INSTRUCTION : 1. ANSWER ALL QUESTIONS.
2. THIS FINAL EXAMINATION IS AN
**ONLINE ASSESSMENT AND
CONDUCTED VIA CLOSE BOOK.**

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

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- Q1** (a) Field work will be completed for the aim of collecting traffic statistics. To determine the present condition of vehicle flow in the region, traffic and associated data are required. Data sources can be classified in two classes, primary and secondary sources. Using appropriate diagram or I-think map, list and classify that traffic flow datasets.
(10 marks)
- (b) Describe briefly the raster and vector data conversion in GIS. Give your rational opinion on how accuracy can be applied to create useful information in case of flood mapping using vector and raster data.
(10 marks)
- Q2** (a) Describe and explain the applications of GIS shapes in term of database elements.
(10 marks)
- (b) Raster and vector are two methods that are used to reduce geographic features to transform and can be coded in computer databases. Define the advantages and disadvantages of these spatial datas.
(10 marks)
- Q3** (a) Objects and features are type of elements in geodatabase. Discuss briefly how these elements can create database in matter of sharing operation.
(10 marks)
- (b) Database management system (DBMS) is used as data organizer in GIS. Describe how the system is working and validate a new technology where database can more quickly access and can run in high security.
(10 marks)
- Q4** (a) Map analysis is one of the functions how GIS works. Explain briefly how does spatial analysis can be performed in vector data?
(15 marks)
- (b) List and define **ONE (1)** application in civil engineering works for each analysis function.
(5 marks)

- Q5** (a) Coordinate reference system (CRS) is widely used to select appropriate coordinate on specific area. Based on **Figure Q5(a)**, define what zone selection is and how you can setup the CRS in Malaysia area. (5 marks)
- (b) GIS is frequently used in data processing and analysis. GIS analysis is an option to develop decision making. Explain how GIS can analyze data in detection of flood prone area. Your answer may include the data type source, data manipulation and data presentation. Use previous event to proof the case. (15 marks)

–END OF QUESTIONS–

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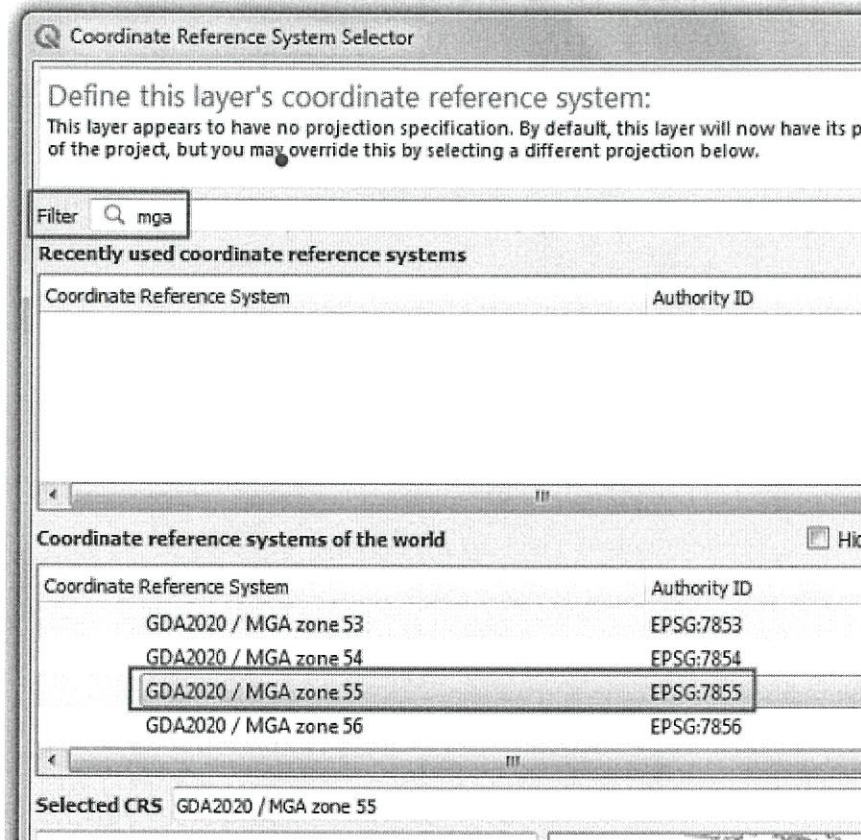


Figure Q5(a) : Coordinate Reference System Selection

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