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Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2022/2023**

COURSE NAME : GEOGRAPHICAL INFORMATION SYSTEM
COURSE CODE : BFG 40803
PROGRAMME CODE : BFF
EXAMINATION DATE : FEBRUARY 2023
DURATION : 3 HOURS
INSTRUCTION :
1. ANSWERS ALL QUESTIONS
2. THIS FINAL EXAMINATION IS CONDUCTED VIA **CLOSED BOOK**.
3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA **CLOSED BOOK**.

TERBUKA

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

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- Q1** (a) GIS is a discipline of information technology that is strongly connected to big data. Explain with an appropriate example the following case,
- (i) The effect of the changes and enhancements in information technology components that are appropriate for improving the accuracy of GIS capabilities. (5 marks)
 - (ii) In terms of data storage technologies that can generate more efficient and precise output outputs. (5 marks)
- (b) Identify and describe the main components of a GIS. (10 marks)
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- Q2** **Figure Q2** shows the data shape connection between real-world, vector, and raster data. Please answer based on the figure,
- (a) List and give examples of vector data. (10 marks)
 - (b) What are the main processes that can be applied to raster data? (10 marks)
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- Q3** (a) **Figure Q3** illustrates the display of GIS software. Please answer the following questions based on the diagram:
- (i) If you simply have a photocopy of the map and listing, organise the processes for creating a layer and entering data. (5 marks)
 - (ii) Select two geoprocesses that are important in defining spatial location. Describe how the data layer is transformed to the output level. (5 marks)
- (b) Coordinate reference systems (CRS) are commonly used to identify suitable coordinates for a certain location. Regarding CRS functions, identify and describe:
- (i) The differences between geographic coordinates and cartesian coordinates. (6 marks)
 - (ii) Which CRS is used in Malaysia. (4 marks)

- Q4** (a) List the objectives of georeferencing and justify the consequences of incorrect georeferencing. (5 marks)
- (b) Describe the most effective geocoding strategy. (5 marks)
- (c) The spatial layout of a data situation influences the majority of the findings in GIS. Spatial analysis is used in data analysis. To offer a more trustworthy outcome, recommend a geographical analysis for each of the cases below and explain why the analysis was chosen.
- (i) Traffic analysis at a traffic light signal intersection. (5 marks)
- (ii) Landfill site selection study. (5 marks)
- Q5** GIS allows civil engineers and other parties to make judgments in the context of data modeling and projection. Predict the usage of modeling and features based on the situation below.
- (a) Urban planning. (10 marks)
- (b) Flood mitigation and control. (10 marks)

END OF QUESTIONS

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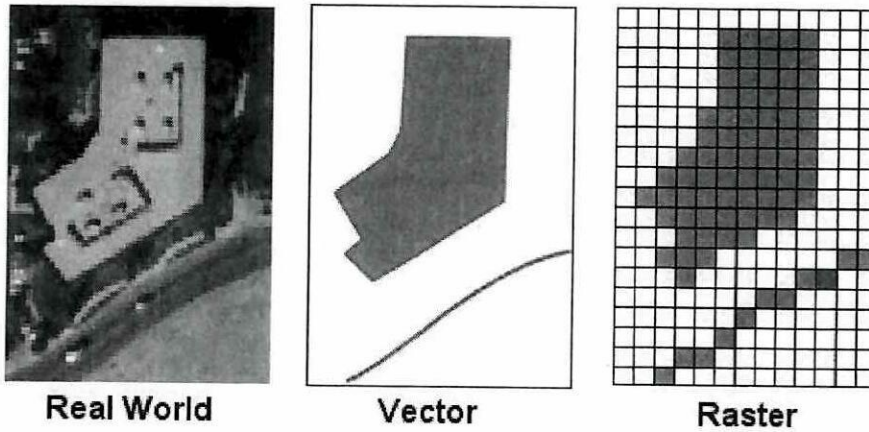


Figure Q2 The relationship between data.

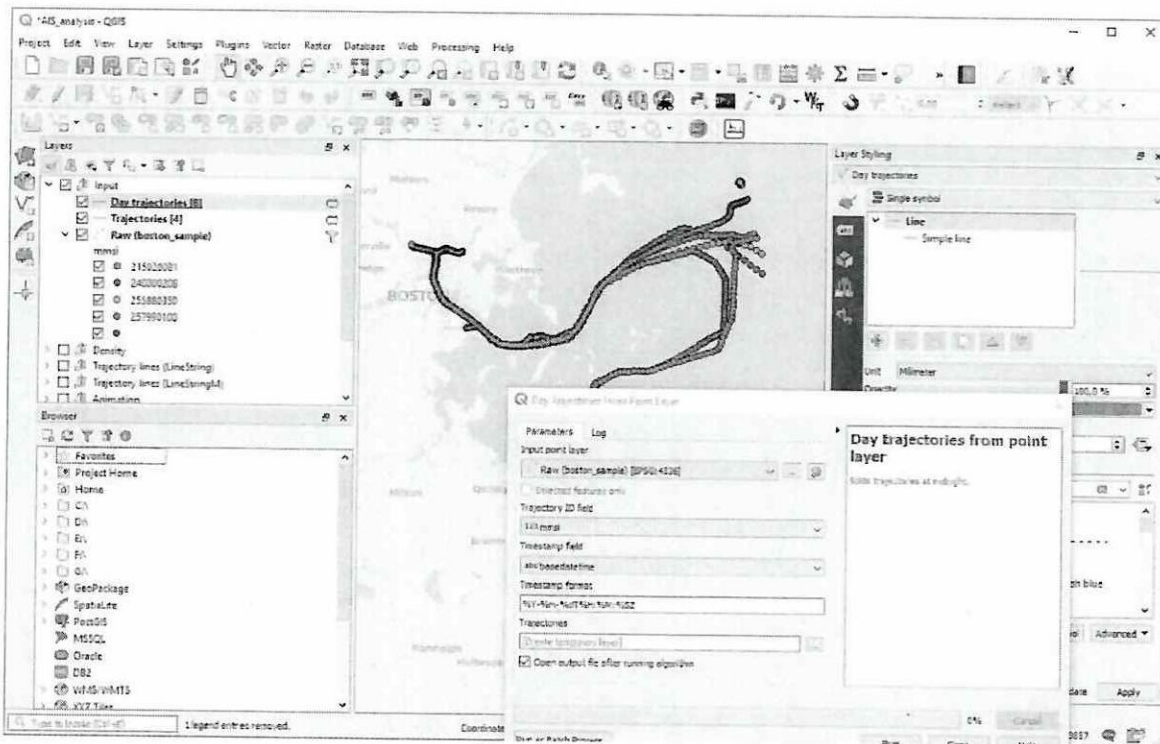


Figure Q3 A display view of QGIS software.