

KATHMANDU UNIVERSITY
End Semester Examination
July/August, 2024

Marks Scored:

Level : B.E.
Year : III

Course : GEOM 313
Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date : 30 JUL 2024

SECTION "A"

[20 Q. × 0.5 = 10 marks]

Choose and encircle in the most appropriate option from each set of choices

- Number of people living in different districts of Bagmati province who own bicycle or car is an example of
a. Nominal Data b. Interval data c. Ratio data d. ordinal data
- Which of the following statements is **TRUE**?
a. Nominal data gives the numerical differences between different data categories.
b. Ratio data can give an indication of by how many times one value is higher than another data value.
c. Ordinal data can give the information of the amount of quantity.
d. Lack of true zero in ratio data indicates the absence of data value.
- Choropleth map are not a suitable choice to represent
a. Nominal data b. Ordinal data c. Interval data d. Ratio data
- Flow maps are best suited to show
a. Nominal data b. Ordinal data c. Interval data d. Ratio data
- 'Size' is a visual variable that dominantly provides perception
a. Selective b. associative c. ordered d. quantitative
- Map with varying sized circles where each circle indicates the magnitude (data value) of its attribute is called:
a. Dot density map b. bivariate map
c. graduated symbol map d. Pictorial symbol map
- Suppose you want to share a data about the buildings of KU and their attribute (about type of building, no of floors, usage of rooms) to the clients via web mapping so that they can use the raw data in their web app development. In which OGC standard would you publish this data:
a. WMS b. WCS c. WPS d. WFS
- Which programming language is suitable for styling of the web pages
a. HTML b. CSS c. JS d. python
- 'Flannery compensation' is a concept used in which of the following sector
a. Rendering of web pages from map server
b. adjusting symbol sizes in thematic map making
c. efficient data query (spatial indexing) while querying data from server in web mapping
d. adjusting extrusion and base height in 3D animation of ArcScene
- Creating shades of color using different sizes of dots at a defined pattern is called
a. Stochastic Screening b. Frequency Modification Screening
c. Pattern Screening d. Amplitude Modification Screening

11. Map reproduction technique in which the shape to be printed is engraved into the surface of printing plate (picture b) is called:

- Intaglio printing
- relief printing
- offset printing
- Planographic printing



12. Impression cylinder in offset printing:

- Helps to move dampening roller
- Absorbs unnecessary water and prevents it from going to the paper
- Has CMYK color feeder attached to it
- Helps to move the print medium after print is completed.

13. Flyover animation showing different buildings and places insider KU premises is an example of

- Multiple static map animation
- temporal animation
- Temporal visualization
- non temporal animation

14. You have a shapefile showing countries winning the World Cup since 1900, with attributes: Name of country and Year (year of the World Cup).

If you want to create an animation in ArcGIS to show chronologically the countries where the World Cup has been organized since 1900, which animation type would you choose?

- Key frame animation
- Group animation
- Time animation
- Layer animation

15. Extrusion concept is specifically used in 3D animation of ArcScene to:

- Create a 3D looking like object by stretching a 2D object vertically for e.g. turning points to columns (poles)
- To align different layers to a same reference height
- To enable animation in ArcScene
- To export Scene layers as a '3D image'.

16. Which of the followings are not true about 'Story maps'.

- Story map is an example of multimedia cartography.
- Story maps by ESRI/ArcGIS runs only on desktop applications.
- Story maps support embedding social media content.
- Story maps are interactive.

17. Data exploratory tools are used in geo-visual analytics to explore the data and understand patterns/trends. Which of the following is not a major data exploratory tool:

- Brushing
- Multiple-linked views
- Re-expression
- (Blinking) Title of visualization

18. Big data:

- doesn't require database for handling
- are useful for understanding insights or hidden patterns of objects/ phenomenon
- usually available in coarser resolution.
- Are generated less flexible to adapt new data types or resources compared to small manageable data.

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19. Which of the following is not an example of interactive visualization?
- a. Web map created using qgis2web plugin providing attribute filter and search functionality.
 - b. Animation video (.mp3) that shows the change of forests of Africa for the past 20 years
 - c. Story maps allowing user to click on a hyperlink to open a YouTube video.
 - d. Weather map showing wind movement that provides wind speed information upon hover over an area.
20. Web map created from CartoDB showing buildings of Banepa where user is allowed to draw a circle to select the buildings within the desired circle is an example of:
- a. static web map
 - b. analytical web map
 - c. collaborative web map
 - d. animated web map



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Semester : II
F. M. : 40

SECTION "B"

[6 Q. × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. Briefly describe about the 4-tier model of client-server architecture in web mapping. [4]
2. Thematic mapping is one of the major disciplines in cartography. Explain detail about any three types of thematic maps you are familiar with, stating 'the type of data (i.e. measurement scale)' each of them can show. [4]
3. List different classification scheme in GIS and explain any three of them in brief. [4]
4. Mapping change is crucial for understanding patterns. Describe any three techniques in cartography for mapping change including their advantages and limitations. [4]
5. Describe different levels of measurement scale of data along with examples. Differentiate between qualitative and ordered perception properties. [3+1]
6. Write short notes on *ANY TWO*: [2×2=4]
 - a. CartoDB and Map Libre
 - b. Process color and Spot Color
 - c. Practical ways of web mapping using non-programming methods
 - d. Map design in Cartography
 - e. Atlases
7. Define Multimedia Cartography and explain how story maps serve as an effective tool for multimedia cartography. [1+3]

SECTION "C"

[2 Q. × 8 = 16 marks]

Attempt *ANY TWO* questions.

8. Explain screening and its types? For what sort of print reproduction is offset lithography used, describe its process. [3+5]
9. What do you understand by geovisual analytics, why is it important in current scenario of big data. [3]
Different users use maps/visualization platforms for different goals. As a designer, how can we you design suitable maps or visualization platforms that meet the users need and objectives (*hint: describe by explaining what 'users' aspects do you need to consider and how do you conduct your research?*) [5]
10. Explain about three main techniques of animation in ArcGIS you practiced in your lab exercise for animation. (HINT - Include description of- for visualizing what sort of data you used/can use the animation (*you can give your own example of data too*), the main tools you used (*step by step explanation is not compulsory*), how you can share your animation, etc. [6]
Are Animated maps always better than static maps, explain? [2]

