



**GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY**  
**Faculty of Built Environment & Spatial Sciences**  
Department of Spatial Sciences

**BSc (Hons) in Surveying Sciences**  
End Semester Examination – May/June 2023  
Year 02 - Semester I - Intake 39

**SP 22003 – CARTOGRAPHY II**

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<b>Questions</b>	<b>: 07</b>	<b>Examination Date</b>	<b>: 25<sup>th</sup> May 2023</b>
<b>Pages</b>	<b>: 04</b>	<b>Duration</b>	<b>: 03 Hours</b>

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**Instructions to Candidates**

- Answer any **FIVE (05)** questions.
- This is a **closed book** examination.
- All examinations are conducted under the rules and regulations of the KDU.
- Write in **blue or black** pens only.

**Question 01**

GIS is a product of the development of Computer-assisted Cartography, which generated geo-referenced spatial digital databases.

- (a) Define the term GIS (Geographical Information Science) and briefly explain the difference between Geographical Information Science and Geographical Information System. (06 marks)
  
- (b) Your colleagues may not aware of GIS, and your task is to aware them to establish a GIS in your organization. Make a brief note to them describing the advantages of GIS over the non-spatial information systems with suitable examples. (06 marks)
  
- (c) Assume that you are assigned to establish a GIS in your organization. Briefly explain the components that you should combine to make a perfect GIS system. (08 marks)

**[Total 20 marks]**

**Question 02**

Typography is the art of arranging letters and text in a way that makes the copy legible, clear, and visually appealing to the reader.

- (a) List out the advantages of using digital maps over paper maps. (04 marks)
  
- (b) Using an example, describe the fundamental steps of producing a map in ArcGIS. (06 marks)
  
- (c) Briefly explain the role of typography in Cartography. (10 marks)

**[Total 20 marks]**

### Question 03

One of the most important aspects of thematic mapping is the map projection. So, every map user and maker should have a basic understanding of projections.

- (a) Define what is map projection and explain why projections are important in map making. (10 marks)
- (b) Describe the types of map projections with suitable diagrams. (10 marks)

**[Total 20 marks]**

### Question 04

Maps are the primary tools by which spatial relationships and geographic data are visualized. Maps therefore become important documents.

- (a) List out the basic map Elements in Cartography. (04 marks)
- (b) State what is a map and explain how a map can be considered as an information system. (06 marks)
- (c) As you are following a Surveying Sciences Degree, you are invited to deliver a presentation on GIS and it's Applications for your colleagues in the University, who have no basic knowledge on GIS. Briefly describe the points you should make in your presentation. (e.g., applications, areas, etc.). (10 marks)

**[Total 20 marks]**

### Question 05

Write short notes on the followings:

**[5x4 = 20 marks]**

- (a) History of Typography
- (b) Lettering on a Map
- (c) Map Production
- (d) Cartographic Generalization

**Question 06**

Color is a very useful attribute to depict different features on a map.

- (a) State what is meant by “Secondary Colors” and briefly discuss how does it differs from Primary Colors? (05 marks)
- (b) Briefly explain the followings:
- i. Color tints and shades (05 marks)
  - ii. Color schemes (05 marks)
  - iii. Role of colors in Cartography (05 marks)

**[Total 20 marks]**

**Question 07**

A Digital Elevation Model (DEM) is a representation of the bare ground (bare earth) or the topographic surface of the Earth excluding trees, buildings, and any other surface objects.

- (a) List out the elevation data acquisition methods used to create DEMs in Digital Cartography. (05 marks)
- (c) Briefly explain the followings
- i. DEM applications (05 marks)
  - ii. The quality of DEM (05 marks)
  - iii. TIN (05 marks)

**[Total 20 marks]**

- End of Question Paper -