BINDURA UNIVERSITY OF SCIENCE EDUCATION   AUG 2023

FACULTY OF SCIENCE EDUCATION

DEPARTMENT: CURRICULUM AND EDUCATIONAL MANAGEMENT STUDIES

PROGRAMME: MASTER OF SCIENCE EDUCATION DEGREE IN GEOGRAPHY

COURSE CODE: MGG503 Advanced Geographical Techniques

DURATION: THREE HOURS   TOTAL MARKS: 75 MARKS

INSTRUCTIONS TO CANDIDATES
1. Answer any three questions.
2. Use illustrations and diagrams where relevant
3. Marks for each question are indicated in brackets)

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1. (a) Outline the capabilities of GIS in handling geospatial data. [5]

   (b) Explain how GPS functions. [5]

   (c) Distinguish GIS from other information systems. [5]

   (d) Critically examine the challenges that may hinder the adoption of GIS by some organisations in Zimbabwe. [10]

2. (a) Describe the advantages of the following data models:

(i) Raster   [2]

(ii) Vector   [2]

(b) Explain with examples each of the following data values:

(i) nominal   [3]

(ii) ordinal   [3]

(iii) interval [3]

(iv) ratio   [3]

d) Evaluate the feasibility of establishing GIS laboratories in secondary schools in Zimbabwe.   [9]

3. (a) What are the disadvantages of the Globe when compared with flat maps? [4]

(b) Compare the Mercator and Gall-Peters Projections. [10]

(c) Assess the disadvantages of the file system and advantages of database management system (DBMS). [11]

4. (a) Describe the following types of sensors and terms used in remote sensing:

(i) Active sensors   [3]

(ii) Passive sensors   [3]

 (iii) Sun-synchronous   [3]

(iv) Geostationary   [3]

(b) Critically assess the role of remote sensing towards achieving sustainability in Zimbabwe's agricultural sector. [13]

5. a) Explain with examples the following terms used in remote sensing:

(i) True colour composite   [3]

(ii) False colour composite   [3]

 (iii) Supervised classification   [3]

(iv) Unsupervised classification   [3]

b) Citing examples from Zimbabwe evaluate the effectiveness of the application of remote sensing in managing climate change induced floods. [13]

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