

BINDURA UNIVERSITY OF SCIENCE EDUCATION

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)

AUG 2024

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1. (a) Describe the components of GIS. [5]
(b) Explain with clear examples how organisations can benefit from GIS. [15]
(c) Distinguish GIS from other information systems. [5]
 2. (a) Distinguish data from information; spatial data from attribute data. [6]
(b) Describe the advantages of three data sources for GIS. [6]
(c) Briefly describe how GPS works. [5]
(d) Compare raster and vector data models. [8]
 3. (a) Describe the following fundamental sensors used in remote sensing:
(i) Active sensor [3]
(ii) Passive sensor [3]
(iii) Imaging sensor [3]
(iv) Non-imaging sensor [3]
(b) Describe each of the following platforms for remote sensing:
(i) Ground-based [3]
(ii) Geostationary satellites [3]
(iii) Sun-synchronous satellites [3]
(c) What are the advantages of satellites in remote sensing? [4]

4. (a) Define the following terms used in remote sensing:
- (i) Spatial resolution [2]
 - (ii) Spectral resolution [2]
 - (iii) Pattern [2]
 - (iv) Texture [2]
 - (v) Shape [2]
 - (vi) Size [2]
 - (vii) Temporal resolution [2]
- (b) Explain how remote sensing has been applied in geographical studies. [11]
5. (a) Explain the merits database management system (DBMS) over the file system. [8]
- (b) Define these terms used in DBMS:
- (i) tuple [3]
 - (ii) attribute [3]
 - (iii) field [3]
- (c) Explain the differences between relational and object oriented databases. [8]

END OF PAPER