UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER

PROGRAMME: MSc in ENVIRONMENTAL RESOURCE

COURSE CODE: ERM 602

TITLE OF PAPER: GIS FOR ENVIRONMENTAL RESOURCE
MANAGEMENT

TIME ALLOWED: THREE (3) HOURS

SPECIAL MATERIAL REQUIRED: NONE

INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS

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GRANTED BY THE CHIEF INVIGILATOR

QUESTION 1.
Discuss the components of GIS, describing how availability of some of the
components can affect the use of GIS for land resource management in Swaziland.
(25 marks)

QUESTION 2.
Discuss how GIS can be used in the monitoring and management of land resources of
your choice, highlighting the data to be used, as well as the processes and procedure
to be followed.   (25 marks)

QUESTION 3.
Describe how a map of land features can be produced by on-screen digitising from
satellite data, indicating how the raster GIS (satellite data) can be linked with vector
GIS. Give examples of software needed for both raster GIS and vector GIS. Also
specify the format of vector data that would be shown on the resultant map (vector
map).   (25 marks).

QUESTION 4.
Discuss five issues to be considered when selecting data for GIS, highlighting the
importance of each of the issue.   (25 marks)

QUESTION 5.
(a) Discuss the process of binary masking, stating conditions under which it can be
     used.   (10 marks)

(b) Explain three sources of GIS data, highlighting characteristics of each of the data
     source.   (15 marks)