GEO 832

CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

SECOND YEAR EXAMINATION FOR THE AWARD OF MASTER OF SCIENCE IN NATURAL RESOURCES AND MASTER OF SCIENCE IN ENVIRONMENTAL SCIENCE

GEOG 832: GEOGRAPHIC INFORMATION SYSTEMS AND REMOTE SENSING

STREAMS: MSC (NARE & ENSC) Y2S2   **TIME: 3 HOURS**

DAY/DATE: WEDNESDAY 07/8/2019   **8.30 A.M. – 11.30 A.M.**

INSTRUCTIONS:
   (i)   **Answer question ONE and THREE other questions**
   (ii)   **Illustrations, examples and diagrams should be used when necessary**

1.   (a)   Explain THREE properties of a GIS software that enables it to carry out spatial analysis.   [6 marks]

     (b)   Explain THREE platforms commonly used for earth observation.   [6 marks]

     (c)   (i)   Calculate the distance between two towns A (6, 4) and B (4, 2)[1.5 marks]

           (ii)   Town X has coordinates (-3.456789, 37.5789401), rewrite the location of the town in reference to latitude and longitude CRS   [1.5 marks]

2.   Elaborate on the six stages undertaken when carrying out digital image processing on satellite images.   [15 marks]

3.   Discuss characteristics of any FIVE classes of GIS softwares.   [15 marks]

4.   (a)   Carry out a contrast linear stretch on the following 3x3 image pixel array for digital number 40   [6 marks]

15	60	85
30	40	25
65	55	100

     (b)   Examine THREE kinds of remote sensing used for earth observation.   [9 marks]

5. Discuss any FIVE uses of remote sensing and GIS in the field of environmental and natural resources management. [15 marks]