EMBU UNIVERSITY COLLEGE

(A CONSTITUENT COLLEGE OF THE UNIVERSITY OF NAIROBI)

FIRST SEMESTER EXAMINATION 2014/2015

FIRST YEAR EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN ENTOMOLOGY

SZL569: GEOGRAPHICAL INFORMATION SYSTEMS & REMOTE SENSING

DATE: DECEMBER 17, 2014   TIME: 16:00 – 19:00

INSTRUCTIONS:

Answer Question ONE and ANY Other THREE Questions.

QUESTION ONE.

a) Describe the differences between the following terms:-

    i). Active and passive remote sensing   (5 marks)

    ii). Rayleigh and Mie scattering   (5 marks)

    iii). Spectral and radiometric resolution   (5 marks)

b) Explain the importance of maintaining metadata in GIS data analysis   (5 marks)

c) Outline the elements of image interpretation?   (5 marks)

QUESTION TWO.   (25 marks)

Outline the major steps of transforming a digital imagery into classified image

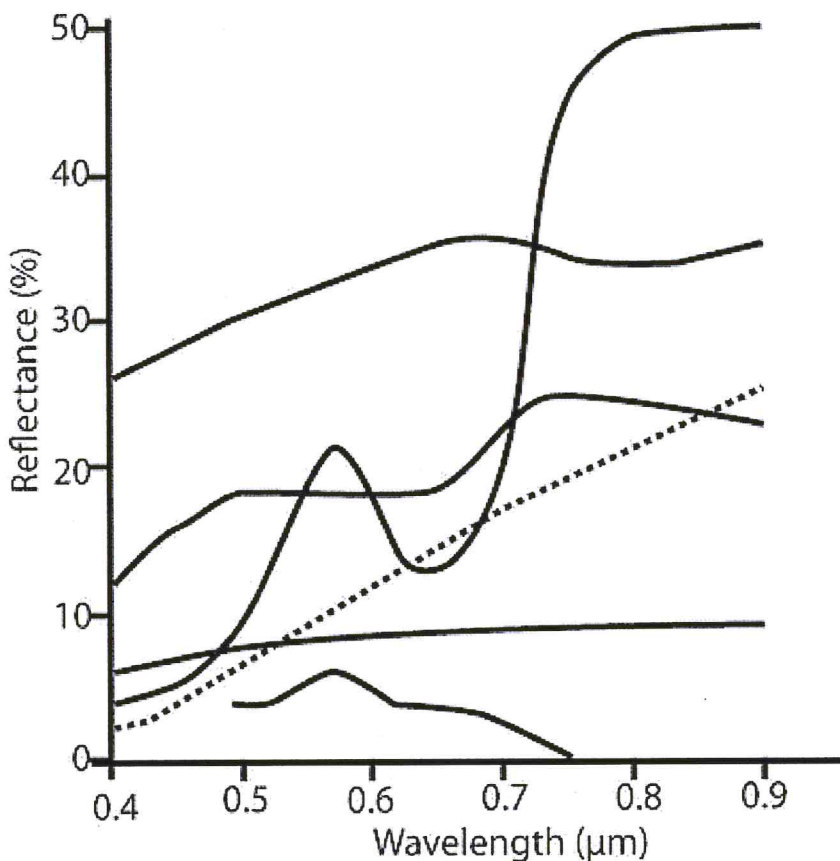**QUESTION THREE.**   (25 marks)

Using illustrations, describe how reflectance of electromagnetic radiation varies with types of surfaces (specular and diffuse reflecting surface) and how these differences may be useful in image classification.

QUESTION FOUR.

a) Indicate on the diagram below the spectral response curves for clear water, asphalt, shingles, sandy loam soil, concrete, and grass.

                                                                     (15 marks)

b) Elucidate the value of spectral response curves in multispectral remote sensing (10 marks)

QUESTION FIVE.

Explain how RADAR imaging system is relevant to mapping forest cover.   (25marks)

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