RVK/KW/13/3266/3605

Faculty of Engineering & Technology

Eighth Semester B.E. (Civil)/Eighth Semester B.E. P.T. (Civil) Examination

APPLIED REMOTE SENSING AND GIS

Elective—III

Sections—A & B

Time—Three Hours] [Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.

(2) Answer **THREE** questions from Section A and **THREE** questions from Section B.

(3) Due credit will be given to neatness and adequate dimensions.

(4) Assume suitable data wherever necessary.

SECTION—A

1. (a) Explain with suitable diagram the wavelengths in electromagnetic spectrum utilised in remote sensing. Give a note on spectral response curve on vegetation, soil and water. 8

(b) What are sensors ? Discuss thermal and radar sensors. 6

2. What is remote sensing ? What are the advantages and disadvantages over conventional system ? Describe any one in detail. 13

3. (a) What is relief displacement in vertical photograph ? Derive an expression for relief displacement. 7

   (b) The scale of an aerial photograph is 1 cm = 100 m and size of the photograph is 20 × 20 cm. If the longitudinal overlap is 60% and the side lap is 40%, determine the no. of photograph required to cover an area of 10 × 10 kms. 6

4. (a) Explain selective and non-selective scattering of EMR. 7

   (b) Explain various elements of image interpretation. 6

5. Write short notes on any **THREE** :—

   (a) Stereoscope

   (b) Digital data formats

   (c) Geostationary and sunsynchronous satellites

   (d) Atmospheric windows

   (e) Roll, pitch and yaw. 13

SECTION—B

6. What do you understand by digital image processing ? What are the sources of radiometric errors and how are they eliminated ? 13

7. What do you understand by Image Enhancement ? Describe various types of contrast manipulation. 13

8. (a) Distinguish between raster and vector method of GIS. 7

   (b) Distinguish between spatial and non-spatial data. 6

9. (a) Explain the application of Remote Sensing in land use planning. 7

   (b) Describe the application of Remote Sensing in water-shed management. 6

10. Write short notes on (any **THREE**) :—

    (a) Level slicing

    (b) Topology

    (c) Edge enhancement

    (d) Component of GIS

    (e) Spectral rationing. 14