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Reg. No. :

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**Question Paper Code: 55U21**

Ph.D COURSE WORK EXAMINATION, MAY 2018

Elective

Course work

15PSE521 - REMOTE SENSING TECHNIQUES AND GIS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

- Which one of the following relationship between the wave length ( $\lambda$ ), and frequency and the speed (C) of the electromagnetic wave is correct? CO1- R  
(a)  $C = v + \lambda$       (b)  $C = v/\lambda$       (c)  $C = v\lambda$       (d)  $C = 1/ v\lambda$
- The sun – synchronous satellites are resolving at a height of CO2- R  
(a) 800 – 1000km      (b) 1000 – 1200km      (c) 600 -800km      (d) 1100 – 1300km
- The apparent roughness or smoothness of a region within an image is called CO3- R  
(a) Pattern      (b) Association      (c) Texture      (d) Tone
- The graphical representation of the earth features is called CO4- R  
(a) Scale      (b) Map      (c) Projection      (d) None of these
- The most common method of encoding spatial features from paper maps is CO5- R  
(a) Manual digitizing      (b) Scanning      (c) Printing      (d) None of these

PART – B (5 x 3= 15Marks)

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|-----|--|--------|
| 6.  | Define remote sensing.                   | CO1- R |
| 7.  | What are the uses of weather satellite?  | CO2- R |
| 8.  | Mention any two satellite data products. | CO3- R |
| 9.  | Define spatial & Non-spatial data.       | CO4- R |
| 10. | What is attribute data?                  | CO5- R |

PART – C (5 x 16= 80Marks)

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|-----|---|----------|------|
| 11. | (a) Explain the atmospheric interaction with electromagnetic radiation.             | CO1-U    | (16) |
|     | Or  |          |      |
|     | (b) Explain the spectral reflectance characteristics for soils, water & vegetation. | CO1- U   | (16) |
| 12. | (a) Give a detail specification and characteristics on meteorological satellites.   | CO2- Ana | (16) |
|     | Or  |          |      |
|     | (b) Discuss in details on air borne and space borne TIR.                            | CO2- Ana | (16) |
| 13. | (a) Write short notes on:<br>a) Image enhancement<br>b) Image filtering             | CO3- U   | (16) |
|     | Or  |          |      |
|     | (b) Explain the details interpretation keys with examples.                          | CO3- U   | (16) |
| 14. | (a) Describe the fundamental projection classification of maps.                     | CO4- U   | (16) |
|     | Or  |          |      |
|     | (b) Explain the various components of GIS with an example.                          | CO4- U   | (16) |
| 15. | (a) Explain the role of GIS in Highway alignment studies.                           | CO5- U   | (16) |
|     | Or  |          |      |
|     | (b) Explain how GIS can be utilized as a land information system.                   | CO5- U   | (16) |