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B.E./B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV 2013
GEOINFORMATICS, SEMESTER – V (REGULATIONS 2008)

GI-9302- MICROWAVE REMOTE SENSING

Time: 3 hrs

Answer ALL Questions

Max Marks: 100

Part – A (10 x 2 = 20 Marks)

1. Write down the necessity of aperture synthesization?
2. Differentiate between the surface and volume backscattering?
3. What do you mean by resonant backscattering?
4. Write down the atmospheric influence on brightness temperature?
5. List out the instruments contained in ENVISAT ASAR mission.
6. Define ScanSAR mode observation?
7. Write down the functions of scatterometer subsystems?
8. Write down the purpose of stokes vector in radar polarimetry?
9. What do you mean by velocity bunching?
10. Write down the backscattering characteristics of multiyear ice.

Part – B (5 x 16 = 80 Marks)

11. Discuss in detail about the Soil moisture estimation using SAR Systems. (16)
12. a.(i) Discuss in detail about the target parameters influence on the radar backscatter. (10)
(ii) Derive the backscattered power of the monostatic radar. (6)
(OR)
b. (i) Explain in detail about the Radar imaging geometry. (8)
(ii) Write with neat sketch about the resolution parameters of SLAR system. (8)
13. a. Explain in detail about the characteristics and applications of RADARSAT missions (16).
(OR)
b. (i) Write with neat sketch about the specification and operation ALOS missions (10)
(ii). Discuss in detail about the precision and standard microwave data products. (6)
14. a. Discuss in detail about the DEM generation using single pass SAR interferometry. (16)
(OR)
b. Explain in detail about the sea surface height calculation using RADAR. (16)

15. a. (i). Explain in detail about the microwave emission characteristics of various earth features? (8)

(ii) Write with neat sketch about the clapp and facet models. (8)

(OR)

b. (i) Write down the thermal radiation laws applicable to passive microwave sensing (6)

(ii) Write with neat sketch about the radar geometric distortions (10)

