

29/5/13



B.E. / B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2013
CIVIL ENGINEERING BRANCH
SECOND SEMESTER
PH 9161 - PHYSICS FOR CIVIL ENGINEERING
(REGULATIONS 2008)

Time: 3 hr

(Max. Mark: 100)

Answer ALL Questions
Part - A (10 × 2 = 20 Mark)

1. Explain the various modes of transmission of heat.
2. What is air filtration?
3. How hemispherical reflectors are formed?
4. What are the different types of fans?
5. What are the sources of noises?
6. Explain briefly artificial sky models.
7. What are metallic glasses?
8. What are shape memory alloys?
9. What seismic waves?
10. What are the safety measures in fire hazards?

Part - B (5 × 16 = 80 Mark)

11. (a) Discuss in detail the factors affecting the thermal performance of building.
12. (a) Explain in detail the different types of airconditioning systems.
(OR)
(b) Discuss in detail the ventilation in a building and explain how is the ventilation is measured.
13. (a) Write in detail about the sound insulation in buildings.
(OR)
(b) Discuss in detail the artificial lighting in buildings.
14. (a) Explain in detail the fiber reinforced plastics (FRP) and its applications.
(OR)
(b) Discuss in detail the manufacturing process of ceramics and its applications.
15. (a) Write in detail about the earth quake.
(OR)
(b) Explain in detail the operation of different types of fire extinguishers equipments.

Degree: B.E. Degree End Semester Examination May 2013
Branch: Civil Engineering
Semester: II Semester
Code number /subject: GI 9302 Microwave Remote Sensing
Duration: 3 hours

Max marks 100

Answer all questions
Part A (10x2=20marks)

1. Explain about SEASAT mission and its unique advantages
2. What is the advancement in RISAT mission of India?
3. Explain the Bragg scattering.
4. Explain SLAR and SAR
5. Write complex wave description and explain
6. What do you mean by **coherence** and **interference**
7. What do you understand by **Brightness Temperature**
8. What is the influence of **Dielectric constant** of a material on microwave scattering
9. What do you mean by calibration in RADAR technology
10. Explain importance of scatterometer mission in Microwave Remote Sensing

Part B (5x16=80 Marks)

11. (a)(i) Explain by mathematical equation the principles of SAR interferometry. (8marks)
(ii) Explain processing steps involved in determining DEM and land subsidence monitoring. (8marks)
12. (a) For the following applications, choose the radar frequency (X, C, , L, P) that you would use and explain your reasoning: (a) Estimating soil moisture, (b) Discriminating of crop type (c) Determining the extend of flooded surfaces in a heavily forested canopy (d) Obtaining accurate measurements of swelling or buckling in seismically active areas (e) Detecting buried river channels in hyper-arid environments- (f) Mapping of oil slicks
(or)
(b) (i) What do you mean by passive microwave remote sensing? (8marks)
(ii) Explain some application of passive microwave remote sensing (8marks)
13. (a) (i) Explain in detail the Geometric characteristics of SAR imagery. (8 marks)
(ii) Explain geological interpretation of RADAR imagery (8 marks)
(or)
(b) (i) Explain how system and target parameters affect the backscatter coefficient. (8 marks)
(ii) Explain how SAR data is unique in flood mapping and soil moisture estimation. (8 marks)
14. (a) (i) Explain Altimetry missions and its use in oceanography. (8 marks)
(ii) Explain the principles of wind scatterometry, applications. (8 marks)
(or)
(b) (i) Explain the application of SAR in oceanography ,glacial and ice studies. (8 marks)
(ii) Explain Stokes scattering matrix and its use in polarimetry. (8 marks)
15. (a) (i) How will you describe and represent the polarized waves and also explain about partial polarization. (8 marks)
(ii) Explain polarimetric synthesis and polarimetric decomposition (8 marks)
(or)
(b) (i) Derive area extensive form of radar equation and explain its limitation and applicability. (8 marks)
(ii) Explain agricultural and forestry application of active microwave remote sensing. (8 marks)