



B.E. / B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, MAY 2011

SECOND SEMESTER  
PH 9162 - PHYSICS FOR GEO - INFORMATICS

(REGULATIONS 2008)

24

Time: 3 hr

( Max. Mark: 100)

Answer ALL Questions

Part - A (10 × 2 = 20 Marks )

1. What are radiation quantities?
2. What do you mean by luminescence?
3. What is the condition for Mie scattering?
4. Define azimuth angle.
5. What are the defects in lenses?
6. What are the advantages of using the eyepiece?
7. Why the value of gravity is varying from equator to poles?
8. What is the advantage of Geo-stationary orbits?
9. What is the advantage of optical preamplifiers?
10. What is photopic vision?

Part - B (5 × 16 = 80 Marks

11. (a) Derive the expression for Rayleigh scattering.
12. (a) Derive an expression for Planck's black body radiation.  
(OR)  
(b) i. Obtain the expression for Stephens - Boltzmann law (12)  
ii. Write a note on spectral quantities. (4)
13. (a) With necessary diagram explain photographic processes.  
(OR)  
(b) Derive an expression for the minimum spherical aberration.
14. (a) Explain in detail about the gravitational potential and find out the gravitational potential of a solid sphere at a point inside and out side of the sphere.  
(OR)

- (b) With neat diagrams, explain the various types of satellites
15. (a) What is photomultiplier tube (PMT)? Explain the construction and working of PMT with neat diagram. How the dark current will affect the measurements?

(OR)

- (b) Write a short notes on:
- i. Avalanche Photodiodes
  - ii. Photovoltaic dtectors