18/10/13

B.E. (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV/ DEC 2013

GEO-INFORMATICS ENGINEERING BRANCH

SECOND SEMESTER

PH8204 - PHYSICS FOR GEO INFORMATICS ENGINEERING

(REGULATIONS 2012)

Time: 3 hr (Max. Mark: 100)

Answer ALL Questions

Part - A ($10 \times 2 = 20$ Mark)

1. Define emissivity.
2. What will be temperature of a star whose energy distribution shows a maximum at 450 nm?
3. What is Mie scattering? Give example.
4. What do you mean diffused reflection ?
5. What do you mean by false color photographic film ?
6. How resolution of a photographic film is affecting the "speed" of a film ?
7. State Kepler's law of planetary motion.
8. What are frequency ranges of RADAR ?
9. What do you mean by photo-voltaic cell ?
10. What is advantages of avalanche photo diode ?

Part - B ($5 \times 16 = 80$ Mark)

11. (a) What are the different types of satellites ? Describe each satellite with neat diagram and mention their uses.

12. (a) Derive the expression for Planck's black body radiation, from this, deduce Rayleigh -Jean's and Wien's laws. (12+2+2)

(OR)

(b) What is electromagnetic radiation? Explain the sources of electromagnetic waves with neat diagram.

13. (a) Outline the basics of photographic process in the film with neat diagram and explain the performance of photographic film in terms of : speed, contrast and spectral resolution.

(P T O)

(OR)

(b) What are the different types of defects involved in lenses. Describe each defect with neat diagram and also explain the remedy of each defect.

14. (a) From the theory of origin of refractive index, derive the Rayleigh scattering.

(OR)

(b) Explain the various types of polarization processes with neat diagram.

15. (a) Describe the construction and working of a photomultiplier tube with neat diagram and mention the merits and demerits of it.

(OR)

(b) Write short notes on: (6+6+4)

i. Thermal sensors
ii. PiN diodes and
iii. CCD camera.