

29/5/13
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B.E/B.Tech. (Full Time) End Semester DEGREE EXAMINATION, APRIL / MAY 2013

Second Semester

PH 9163 –PHYSICS FOR AGRICULTURE AND IRRIGATION ENGINEERING

(Regulations 2008)

Time : 3 Hours

Answer ALL Questions

Max. Marks : 100

Part – A (10 x 2 = 20 Marks)

1. Give the volume and mass relationships of soil constituents.
2. Write short notes on soil profile
3. Define Photosynthesis.
4. With a neat sketch explain Leaf structure.
5. What is biophysics?
6. What are the effects of new methods applied in agriculture in protection of environment.
7. With a neat diagram explain electromagnetic spectrum.
8. Explain any two uses of remote sensing in agriculture and irrigation.
9. What are direct and indirect ionizing radiations? Give examples.
10. Write a note on food irradiation using electron beams and X-rays.

Part—B (5 X 16 = 80 Marks)

11. What are the Biophysics methods applicable in agriculture? Explain in detail the possibilities of application of new Biophysics methods in agriculture.

12. (a) Explain in detail Soil as a dispersion three-phase system.

(OR)

(b) Explain in detail Field Soil Water Regime.

13. (a) With a neat sketch explain the structure of chloroplast and photosynthetic membranes

(OR)

(b) Explain in detail Dark reaction in Photosynthesis, C-4 Pathway.

14. (a) (i) Explain in detail Sensor technology and the different types of sensors.
(ii) Write a note on pattern recognition.

(OR)

(b) Explain in detail radiant energy, radiant flux density and radiant intensity.

15. (a) Explain in detail the effects of ionizing radiation on biological organisms.

(OR)

(b) Explain in detail the applications of Food irradiation.