KERALA AGRICULTURAL UNIVERSITY

B.Tech. Food Engg. 2016 Admission

1st Semester Final Examination-February 2017

Cat. No: Basc.1103

Title: Engineering Physics (2+1)

Marks: 50

Time : 2 hours

I. Define/State True or False/Fill in the blanks:
(10 x 1=10)

1. Define viscosity?

2. Write down two examples for nonmagnetic and ferromagnetic materials.

3. What is meant by dopping process?

4. What is meant by lasing medium?

5. Define critical field strength in superconductivity.

6. Hologram information is in the form of interference pattern.

7. N-type semiconductor is an intrinsic semiconductor.

8. Expulsion of magnetic lines of force from the interior of superconductor material when cooled to its critical temperature is called ------------

9. In Newton's ring experiment, when the radius of the rings increases, the closeness of the rings ------------

10. Spliting of spectral lines in the presence of magnetic field is ------------

II. Write short notes/answers on ANY FIVE:
(5x 2=10)

1. Explain the reconstruction process of hologram.

2. Draw a neat energy level diagram of He-Ne lase.

3. How the population inversion is achieved in Ruby laser.

4. What is the difference between intrinsic semiconductor and extrinsic semiconductor.

5. Explain Raman effect.

6. What are the applications of optical fibers?

7. Explain type -I superconductor.

III Write answers on ANY FIVE:
(5 x 4=20)

1. Briefly explain about the formation of Newton's ring.

2. How to find out the viscosity of a liquid by Stoke's method.

3. Differentiate between spontaneous and stimulated emission.

4. Explain Josephson's AC and D C effect.

5. Compare Stark effect and Zeeman effect.

6. Derive the law of mass action.

7. Derive the relation between surface tension and surface energy.

IV. Write essay on any ONE
(1 x 10=10)

1. Explain the principles of laser. Describe Nd-YAG laser. Give its uses.

2. Give construction and working of plane transmission grating and explain the formation of spectra by it.

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