KERALA AGRICULTURAL UNIVERSITY

B.Tech (Food.Engg) 2015 Admission
Ist Semester Final Examination-February -2016

Cat. No: Basc.1103   **Marks: 50.00**
Title: Engineering Physics (2+1)   **Time: 2 hours**

I Answer all questions   (10 x 1=10)

1. Define LASER

2. Write down the grating equation? What are the symbols indicate?

3. Define transition temperature

4. What is holography?

5. What is the purpose of Xenon flash lamp in the Ruby laser?

State True or False

6. Laser beam is polychromatic

7. In Fraunhofer diffraction the source and the screen are at finite distance

Fill in the blanks

8. Splitting spectral lines in presence of electric field is called ....

9. In Newton's rings experiment, radius of nth dark ring is proportional to .... of natural numbers

10. The life time of an excited atom in metastable state is .... second

II Answer any Five questions   (5 x 2=10)

1. What is the difference between Diamagnetism and Paramagnetism

2. Write a short note on pumping process and optical cavity

3. Describe streamline and turbulant flow

4. Compare holography with ordinary photography

5. What are Einsteins coefficients

6. Explain numerical aperture and acceptance angle in optic fibers

7. Explain Curie-Weiss law

III Answer any Five questions   (5 x 4=20)

1. Distinguish between Spontaneous emission and Stimulated emission

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

3. Explain about SQUID and its uses

4. Explain about step index fiber and graded index fiber

5. A parallel beam of monochromatic light is allowed to fall normally on a plane transmission grating having 6000 lines/m and the first order maximum is formed at 15^0 10'. Calculate the wavelength of light

6. Write a note on He-Ne-laser

7. Derive the relation between surface tension and surface energy

IV Answer any one question

(1 x 10=10)

1. What is super conductivity? Explain Josephson effect, isotop effect and Meissner effect

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

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