PH-101/1843

B. Tech (Semester-I) Exam.–2016

Engineering Physics

Time : Two Hours
Maximum Marks : **50**

Note : Attempt questions from all sections.

SECTION - A

(Short-answer Type Questions)

Note : Attempt **any ten** questions. Each question carries 2 marks. 10×2=20

1. Define the time ditation.

2. Write Galilean transformation equation for space and time.

3. How fast must an electron move in order that its mass equals the rest mass of the proton?

4. What do you mean by diffraction of light.

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5. Discuss the formation of interference fringes due to a nedge shaped thin film.

6. Describe briefly, the double refraction in a calcite crystal. Define and discuss ordinary and extraordinary rays.

7. Distinguish between ordinary light and laser radiation.

8. What are the differences between spontaneous and stimulated emissions?

9. Explain basic principle of optical fibre.

10. What is a hologram?

11. What is a Fresnel's biprism?

12. Differentiate between inertial and non-inertial frames of reference with the help of suitable example of each.

13. Deduce an expression for the variation of mass with velocity.

14. What is the main condition to produce interference?

15. Discuss some important applications of laser.

SECTION - B

(Long Answer type questions)

Note : Attempt **any two** questions. Each question carries 15 marks. 2x15=30

1. Derive the inverse Lorentz transformation equations.

2. What is polarised light? Derive the theory of production elliptically, circularly polarised light.

3. What are Einstein's coefficients A and B? Establish a relation between them.

4. What is holography? Discuss the salient features of holography and discuss the construction and reconstruction of image on a hologram.

PH-201/1405(O)

B.Tech. (Semester-II) Exam.–2016

Physics

Time : Three Hours
Maximum Marks : **100**

Note : Attempt questions from all sections.

SECTION - A

(Short-answer Type Questions)

Note : Attempt **any ten** questions. Each question carries 4 marks. 10x4=40

1. Give the definition of inertial and non-inertial frame.

2. What is time delation.

3. What is Galilean transformation.

4. Define interference.

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5. Explain deffraction.

6. What do you mean by Resolving power.

7. What are the advantages of polarized light.

8. Define optical activities.

9. What is difference between slit and grating.

10. Give the statement and proof of ampere law.

11. What are the difference between para and dia magnetic substances.

12. Give the principle of Laser.

13. Give the applications of X-rays.

14. Write the statement of debroglie and Heisenberg uncertainty principle.

15. Define brogg's law.

SECTION - B

(Long Answer type questions)

Note : Attempt **any three** questions. Each question carries 20 marks. 3x20=60

1. Give the statement and proof of Schrodinger time dependent and independent wave equations.

2. Give the construction and working of He-Ne Laser.

3. Give the explanation of Hysterisis and its applications.

4. Give the construction and working of Michelson Merley's Experiment.

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