Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec– 2018**

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| **Code :** | **18PH1001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ENGINEERING PHYSICS-ELECTROMAGNETISM,OPTICS AND PROPERTIES OF MATTER** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Course**  **Outcome** | **Marks** |
|  | **PART-A(10X1=10 MARKS)** | | |
| 1. | Define ionic polarization. | CO1 | 1 |
| 2. | What is the principle of Magnetic levitation? | CO1 | 1 |
| 3. | Write the formula of find the velocity of light in free space. | CO2 | 1 |
| 4. | The ratio of Electric and Magnetic field vector is \_\_\_\_\_\_\_\_\_\_\_. | CO2 | 1 |
| 5. | Define Coefficient of viscosity | CO3 | 1 |
| 6. | When a liquid raises in a capillary tube its potential energy \_\_\_\_\_\_\_\_\_\_\_. | CO3 | 1 |
| 7. | Two sources of waves are called coherent if \_\_\_\_\_\_\_\_\_\_\_. | CO4 | 1 |
| 8. | Write Huygen’s principle of probagation of light. | CO4 | 1 |
| 9. | A particle moves in its acceleration of a= -bx, x is the displacement from equilibrium ,What is its period of oscillation | CO5 | 1 |
| 10. | What are matter waves? | CO5 | 1 |

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| **PART B (6 X 3= 18 MARKS)** | |  |  |
| 11. | Write the short note on high temperature superconductors. | CO1 | 3 |
| 12. | Describe the properties of Electromagnetic waves? | CO2 | 3 |
| 13. | What are the important applications of Bernoulli’s theorem? | CO3 | 3 |
| 14. | Write the phenomenon of interference of light. | CO4 | 3 |
| 15. | Define simple harmonic motion Also mention its energy. | CO5 | 3 |
| 16. | Write the Basic principles of Atomic Force Microscope. | CO6 | 3 |

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| **PART C(6 X 12= 72 MARKS)**  **(Answer any five Questions from Q.no 17 to 23. Q.No 24 is a Compulsory Question)** | | | | |
| 17. | a. | Explain the Phenomenon of Hall effect along with its uses? | CO1 | 6 |
| b. | Deduce the expression for the force between current carrying parallel conductors. | CO1 | 6 |
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| 18. | a. | Derive the Electromagnetic Wave Equation? | CO2 | 6 |
| b. | Explain Plane electromagnetic waves. | CO2 | 6 |
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| 19. | a. | Describe how the coefficient of viscosity of a liquid can be determined by Stoke’s method. | CO3 | 8 |
| b. | Deduce Poiseuille’s formula for the flow of the liquid through a capillary tube. | CO3 | 4 |
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| 20. | a. | Describe principle and working of Michelson’s Interferometer. | CO4 | 8 |
| b. | Explain Fresnel Diffraction | CO4 | 4 |
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| 21. | a. | Derive the period of oscillation of Simple pendulum? | CO5 | 6 |
| b. | Deduce the expression for the period and amplitude of Damped harmonic motion. | CO5 | 6 |
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| 22. | a. | State the conditions of Resonance. | CO5 | 6 |
| b. | Explain Huygen’s principle of propagation of wavefront. | CO4 | 6 |
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| 23. | a. | Describe the laboratory method of finding the surface tension of a liquid by the raise of liquid in a capillary tube. | CO3 | 8 |
| b. | Write the Properties of Electromagnetic waves. | CO2 | 4 |
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| **Compulsory:** | | | |  |
| 24. | a. | Write the principle and working of Scanning Electron Microscope | CO6 | 6 |
| b. | Explain the principle of Atomic absorption and Flourescence Spectrometers. | CO6 | 6 |