SRINIX COLLEGE OF ENGEERING, BALASORE

2ND INTERNAL EXAMINATION -2021-22

SEC-B   SEM-1ST   SUB-PHY

F.M=100   TIME-2.30 hr

Answer all The Questions: [2*10=20]

1. State and Explain Huygens Principle?
2. What is Electric flux? On which factor the flux depend on it ?
3. What is Interference of light? Write the some condition of Constructive and Destructive in interference?
4. If r is the position vector, then prove that Div r =0?
5. State Band theory of Solid?
6. What is the value of curl(curl A) if Div A=0 ?
7. State Gauss Law in electrostatic in Integral form?
8. State Poynting theorem and Poynting vector?
9. Define Solinoidal vector field, Give Examples?
10. Compare Static electric field and induced electric field?

Answer any Eight Questions: [6*8=48]

1. State and Explain Braggs law of X-ray diffraction?
2. State Gauss Divergence and Stoke theorem?
3. Explain He-Ne LASER with application of it?
4. Define wave, write the wave equation for it?
5. State Poynting theorem and Poynting Vector?
6. Define LASER, Write some properties of it?
7. State and Explan de-broglie hypothesis and what are the different forms of de-broglie wave lengths?
8. Explain about the Newtons ring experiment?
9. Define a curl of a vector function; write some physical significance of it?
10. How fraunhofer diffraction produces different fringes, Explain?

Answer any two questions: [16*2=32]

1. Derive an expression for fringes width produced in the Young's double slit experiment?
2. Write the Time- dependent Schrodinger equation in Differential form?
3. Establish the differential equation of motion of a Forced Harmonic oscillation and explain Quality factor for it?