B.SC. PROGRAM (GENERAL) 4th SEMESTER INTERNAL EXAMINATION 2021
KANDI RAJ COLLEGE
DEPARTMENT OF PHYSICS

SEMESTER: 4th **STREAM: Program (GCC+SEC)**

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PAPER CODE: PHY-G-CC-T-04 **Paper: Solid State Physics**

Full marks: 10

Answer any five questions: 5X2=10

1. What do you mean by Bravais lattice and Non-bravais lattice?
2. What are lattice parameters?
3. Show the direction of crystal along (0, ½, 1) on a simple cubic lattice.
4. Determine the side of the body centered unit cell if the radius of atom is R.
5. What are Miller indices?
6. What is packing factor? Determine the Atomic Packing factor of FCC lattice.
7. State Bragg's Law.
8. What is a phonon?
9. Mention two failures of the classical free electron model.
10. Why is Magnetism a Physical Property?
11. The horizontal component of the earth's magnetic field at a place is B and angle of dip is 60°. What is the value of vertical component of earth's magnetic field at equator?

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PAPER CODE: PHY-G-SEC-T-02 **Paper: APPLIED OPTICS**

Full marks: 5

Answer Any Five questions of the following: **1×5=5**

1. What is the basic principle behind LASER?
2. What are the coherent sources of light?
3. What are the differences between conventional light and laser?
4. What do you mean by an optical fiber?
5. What are the difference between ordinary photography and Holography?
6. What are the steps to produce a 3D image by holography?