

NOTICE

26/07/2023

Internal Assessment B.Sc. Programme 4th Semester Examination - 2023 Physics

All 4th-semester B.Sc. programme students are hereby informed that the following assignment will serve as the basis for the Physics Internal Assessment. All students must submit this assignment to the Department of Physics by 16/08/2023 with their Name and Roll Number clearly written on the front page.

**Department of Physics
Srikrishna College, Bagula**

CC4:

Answer any ten questions:

1. Distinguish between Amorphous and Crystalline state of matter.
2. What is Phonon?
3. What is Meissner effect?
4. State Curie-Wiess Law for ferromagnetic materials.
5. State Conduction Band and Valence Band of Conductor.
6. Discuss the difference between Type-I and Type-II superconductor.
7. State the Bloch theorem and explain its significance.
8. Calculate Co-ordination number of SCC, BCC and FCC.
9. Derive Bragg's relation from Laue equation.
10. Define Hall coefficient. Why it is positive in materials.
11. What is Polarizability?
12. Write down London's equation. What is London penetration depth?
13. What is the physical significance of Miller Indices?
14. What do you mean by Fermi Level?
15. Show the Reciprocal lattice of FCC is BCC.

SEC(2): Answer any seven questions:

- 1) Explain the term absorbed dose, effective dose and equivalent dose.
- 2) What is KERMA? Write down its SI units? How KERMA is different from absorbed dose.
- 3) Discuss the types of radiation and their ill effects to health.
- 4) Write down the principle of ICRP.
- 5) What do you mean by Bremsstrahlung radiation? Differentiate it from Characteristic X-ray?
- 6) Write down the biological effects of ionizing radiation.
- 7) Explain briefly with example for application of nuclear techniques in : a) Medical science, b) Archaeology, c) Crime detection, d) Mining, e) Art, f) Food safety and preservation
- 8) What is Cherenkov radiation?
- 9) Describe a Geiger Muller counter and explain its working.
- 10) What is nuclear waste? Why nuclear waste management is important?