

**B.Sc.-M.Sc. Integrated Program**  
**Semester-I Examination, 2021**  
**Paper Title: Basics of Physics and Biology or Mathematics Tutorial**  
**Paper Code: BCH-GE-01-TU A and B**  
**Section: PHYSICS**

Time: 45 min

Max Marks: 19

*Attempt all questions. Use only A4 sheets. All parts of a question must be attempted in continuation. Start answer of a fresh question on a new page. Cite examples and draw labelled diagrams wherever necessary.*

**Q. I. A LASER light:** (Marks: 4)

- |                           |                           |
|---------------------------|---------------------------|
| (a) is monochromatic      | (b) is coherent           |
| (c) is highly directional | (d) all three are correct |

**Q. II. The value of potential energy in SHM:** (Marks: 4)

- |                         |                                              |
|-------------------------|----------------------------------------------|
| (a) is invariant        | (b) keeps on decreasing                      |
| (c) keeps on increasing | (d) oscillates between a maxima and a minima |

**Q. III. A photon of 23 eV energy is placed in which part of the EM spectrum?** (Marks: 4)

- |             |              |
|-------------|--------------|
| (a) x-ray   | (b) infrared |
| (c) visible | (d) UV       |

(Marks: 4)

**Q. IV. The central fringe in Newton's Rings interference pattern is:**

- |                          |                         |
|--------------------------|-------------------------|
| (a) dark and circular    | (b) bright and circular |
| (c) bright and parabolic | (d) dark and parabolic  |

(Marks: 3)

**Q. V. Which Maxwell Equation is also known as Gauss Law?**

- |           |            |
|-----------|------------|
| (a) first | (b) second |
| (c) third | (d) fourth |