ABES Engineering College, Ghaziabad

Department of Applied Sciences & Humanities

Session: 2023-24 **Semester: II** **Section: Common to All**

Course Code: BAS201 **Course Name: Engineering Physics**

Assignment 4 (FIBER OPTICS & LASER)

Date of Assignment: **Date of submission:**

1 a) With the help of a well-labelled diagram, name the components of an optical fibre. (2020-21)(K2, CO2)

b) Define term acceptance angle, acceptance cone and numerical aperture? (2021-22) (K1,CO4)

2. a) Why model dispersion is negligible in single mode fiber?(2019-20)(K2,CO4)

b) Define the relative refractive index difference of an optical fiber. Show how it is related to numerical aperture. (2022-23)(K2,CO4)

3. a) What do you mean by scattering loss in optical fibre. (2023-24) (K1,C04)

4. b) State any four differences between single mode and multi-mode step index fibre. (2022-23) (K2,C04)

4. a) Distinguish between spontaneous and stimulated emission. Which one is required for laser? (2021-22, 2022-23)(K2,CO4)

b) What is metastable state? Discuss their role in laser action. (2023-24) (K1, CO4)

5. a)Define population inversion in laser. (2022-23, 2019-20)(K1,CO4)

b) What are solid state lasers? Why He-Ne laser superior than ruby laser?(2023,19)(K1,CO4)