Shree H.N.Shukla group of colleges

PHYSICS
T.Y.B.Sc. (Sem. VI) (CBCS)
QUESTION BANK
PAPER- 603

SECTION-A

Q.1: One marks questions: [5 MARKS]

1   Give the Raman shift equation.

2   Raman spectra are consisiting of which lines?

3   Raman effect is due to collision of _____.

4   Vibrational rotational spectra fall in which region ?

5   Which of the following does not exhibit a rotaional spectra?

6   Give the full form of LASER.

7   What is the ration of He:Ne in laser?

8   Which are the three process that can occur in laser?

9   Give The full form of LIDAR.

10   In Nd-Yag LASER Yag stands for _____.

11   Optical Fibre is based on the principle of _____.

12   The relative difference in the refractive indices of core & cladding is known as the _____.

13   ____ is the measure how much light can be collected by an optical system.

14   What is order of fractional refractive index change?

15   What is ranging of numerical aperture?

SECTION – B

Q.2 (A): Short Questions: [2 Marks each]

1   The exciting line in Raman spectra is 5480 A and stokes line is at 5530 A . Find out the Raman shift.

2   Explain quantom theory Raman spectra.

3	The exciting line in Raman spectra is 56890 A and stokes line is at 5420 A . Find out the Raman shift.
4	Explain Electrical pumping.
5	Expalin spontenous emission.
6	Give the advantages of LASER.
7	What is the difference between single mode and multimode fibre?
8	Explain: total internal reflection.
9	Describe the critical angle of propagation for an optical fibre.

Q.2 (B) : Short questions: [3 Marks each]

1   Give silent features of rotational vibrational spectra.

2   Give the difference between Raman and Fluroscence spectra.

3   What is raman effect? Explain it in detail.

4   Explain : LIDAR

5   Explain the condition of stimulated emission .

6   Expalin : Population inversion.

7   Medical application of fibre optics.

8   Explain difference between the step index and graded index fibre.

9   1. Give the advantage of fibre optics.

Q.2 (C): Write Detail Note ON : [5 Marks each]

1   Explain pure rotational spectra.

2   Explain classical theory of Raman spectra .

3   Give the theory of rotational vibrational spectra.

4   Discuss electronic spectra in detail.

5   Explain the construction and working of He:Ne laser.

6   Explain the principle of : Holography.

7   Explain the construction and working of RUBY laser.

8   Explain the construction and working of Nd-Yag laser.

9   Explain acceptance angle with their equation.

10   Discuss the application of an optical fibre.

11   Explain: losses in optical Fibre.

12   Explain types of fibre.